

LANGUAGE STRUCTURE AND VERSE STRUCTURE

by

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ABSTRACT

This thesis sets out to find ways of discussing the structure of English verse purely in terms of language without recourse to extra-linguistic metrical abstraction. Transformation-generative grammar and other linguistic theories are brought together wherever possible in order to search out linguistic tools for the analysis of verse structure. The 'structure' of verse is taken to include verse movement and verse language, but not poetic form or content.

Section I

This section sets out to develop the phonemic clause as a possible unit of verse structure. The role of juncture and intonation in verse movement are considered as well as that of stress, and so is the connection of the perception of suprasegmentals with the underlying phrase structure. The syllable is considered as the segmental unit of language and its

traditional role in verse theory is discussed. The verse line is considered both as a graphic unit and in its relationship to spoken language. Juncture is found to be the factor common to both the phonic division of speech and the graphic division of verse.

Verse is divided into two main types according to structure: metered and unmetered verse. The language elements of both metered and unmetered verse are examined together with the possible effect of breathing, and other physiological rhythms, on verse movement.

Rules are postulated for the generation of a hypothetical verse line as an extension of R.B. Stockwell's rules for intonation in the generation of a sentence.

Section II

In this section, six examples of unmetered verse are analysed according to juncture divisions into phonemic clauses and are discussed according to underlying phrase structure and other linguistic features. In all six poems, a second analysis is made according to the poet's reading of the poem. A graphic recording of the voice sound was made in each case, and for the live readings, there was also a graphic recording of breath by means of a respiration curve synchronised with the voice.

Conclusions

The conclusions of this thesis are that verse structure can be analysed in terms of juncture and the phonemic clause. That juncture plays a significant part in the movement of verse and offers a practicable division point for the setting up of a unit of verse movement. That the poet's particular use of verse language is an extension of the main language. That in any physical observation of verse readings, the limitations of perception must be taken into account. That although breathing patterns as observed suggest possible connections with the verse line, no general conclusions can be drawn at this point.

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CHAPTER I

INTRODUCTION

I LINGUISTIC STUDIES OF VERSE STRUCTURE

Since 1951, there has been a substantial body of linguistic work concerned with applying linguistic methods to an analysis of verse structure. For present purposes, it is convenient to divide this work into two main groups:

- A. Those studies which accept and justify the traditional concept of meter and metric 'feet' as extra-linguistic abstractions superimposed on language for the purpose of verse categorization and analysis.
- B. Those which do not.

Examples of studies of the group A type are:

E.L. Epstein and T. Hawkes, Linguistics and English Prosody (1959)¹ which sets out to reconcile phonological facts with metric abstractions and to consider (to quote the introduction by Henry Lee Smith, Jr.), "How a poet responding to ...phonological facts, seems to be able to fit English into the procrustean bed of classical prosody, and how dangerous and uncomfortable a bed it is...."²

W.K. Wimsatt, Jr., and Monroe C. Beardsley in their essay of December, 1959, "The Concept of Meter: An Exercise in Abstraction," say, "Our aim is to state as precisely as we can just what the traditional English syllable-accent meter is or depends upon, [and] to rehearse a few more reasons in its support...."³

Seymour Chatman, in his A Theory of Meter (The Hague, 1965), says, "The meter of a poem is not some fixed and unequivocal characteristic, but rather a structure or matrix of possibilities which may emerge in different ways as different vocal renditionsIt is a mistake in method to confuse the metrical abstraction ...with any of its actualizations."⁴

Morris Halle and S.J. Keyser (1966)⁵ base

their theory of the prosody of Chaucer on principles that "assume and arrange in various patterns certain theoretical entities." They say they, "view meter as an abstract pattern," and they set up ten positions to accommodate the presupposed iambic pentameter grid.

On the other hand, there are the studies of the group B type which would prefer to do without the abstraction and to explain the rhythmical properties of verse in terms of the rhythmical properties inherent in the language. These studies would agree with John Hollander that "meter may have to be done over again without recourse to beliefs that poems were somehow beyond language."⁶ Examples of this line of thought are:

John Nist (1964) who sees the unit of versification not as a 'foot' but as a 'cadence' formed by the 'word group' which he regards as the "basic building block of English rhythm."⁷ In fact, he lists as one of the "lies" told to schoolboys in the name of metrics:

That a line of English poetry is an 'ideal' metrical form that transcends its local limitation in a kind of platonic world, separated from the auditory imagination of its performer (i.e. in a complete linguistic vacuum).⁸

Nist's 'cadence' and 'word group' are, of course,

linguistic products of the potent Trager-Smith Outline of English Structure of 1951⁹ which Harold Whitehall welcomed as allowing "us to envisage for the first time a really objective and fully descriptive English metrics...."¹⁰ However, one has to admit that from today's perspective (after sixteen years), the great power of the Trager-Smith Outline has been applied more to 'reconcile' metrical abstractions with formal description than to develop a theory of verse rhythm expressed purely in language terms. The work of Henry Lee Smith,¹¹ Seymour Chatman,⁴ Epstein and Hawkes¹ (among others) are all examples of the reconciliation process. There have been some suggestions of developing new metrical units--Whitehall's metreme,¹² Fowler's grammetric,¹³ and, to some extent, Hollander's emblem⁶--but these, as far as I know, have not been worked out.

There is, however, in England an approach to verse structure which confines itself to language and which is based not on structural description, but on the work of the motor phoneticians. David Abercrombie, the Scottish phonetician, sets up a theory of verse structure as properly part of the concern of phonetics because, he says: "verse is verse as a result of the way certain aspects of the sound, or rather perhaps the sound-producing movements of speech have been

exploited or organized."¹⁴

Abercrombie uses the unit of a 'foot' but his foot is based on the re-inforced lung pulse which produces the isochronously recurring English primary stress,¹⁵ not on the abstract foot superimposed by traditional metrics. Meanwhile, the stress-pulse foot --as set up and defined by Abercrombie--is used in the linguistic theory of Michael A.K. Halliday as one of the rank units of the phonology of his grammar of English.¹⁶

Abercrombie uses his foot to analyse verse structure and hypothesises the occurrence of 'silent stress' in speech and in verse.¹⁷ Abercrombie shows the silent stress as operating to regularize the number of beats per line in, for example, those lines in Christabel that seem to be missing one of the four expected beats.

'Tis the / middle of / night by the / cástle / clóck
has four Abercrombie feet.

My / síre / ' is of a / nóble / líne
has only three without the insertion of the 'silent stress' after sire.¹⁸

One might regard the 'silent stress' as an abstraction if one could not accept its occurrence in speech. In fact, it is interesting to find that

Saintsbury makes a similar hypothesis about metrical feet¹⁹ and something like emphasis on silence can be seen in the English lute songs of the early seventeenth century where analysis of the verse structure according to the Abercrombie foot matches up with the accompanying musical phrases, and at points where Abercrombie might put in a silent stress, the voice is found to be silent while there is, as it were, an underlining chord on the lute.²⁰

II ORIGINS AND ATTITUDES OF THESIS

My thesis grows in part from Abercrombie and the physical basis of speech and verse, in part from the Trager-Smith descriptive phonology, but it extends to include some of the theory of transformational-generative grammar, as I understand it to date. How I have used T-grammar techniques will be discussed at various points in the thesis; here I should like to refer in a general way to the aspects of T-grammar theory which have influenced my thinking as regards an analysis of verse structure. Principally, I have been affected by the T-grammar attitude towards the intuition and innate competence of the native speaker. References to this aspect of the theory are to be found all through the literature of transformational grammar. I have chosen the following passages from Noam Chomsky's

Topics in the Theory of Generative Grammar (The Hague, 1966) as setting out just that connection between the language and the language user that seem to me to be important in a linguistic study of literature.

A distinction must be made between what the speaker of a language knows implicitly (what we may call his competence) and what he does (his performance). A grammar, in the traditional view, is an account of competence. It describes and attempts to account for the ability of a speaker to understand an arbitrary sentence of his language and to produce an appropriate sentence on a given occasion.

Performance provides evidence for the investigation of competence....

Notice, incidentally, that a person is not generally aware of the rules that govern sentence-interpretation in the language that he knows; nor, in fact, is there any reason to suppose that the rules can be brought to consciousness. Furthermore, there is no reason to expect him to be fully aware even of the empirical consequences of these internalized rules - that is, of the way in which signals are assigned semantic interpretations by the rules of the language that he knows (and, by definition, knows perfectly).²¹

Alongside of the idea of an innate language competence develops the idea of the creative use of language. That is to say, from his innate competence, a speaker may produce language (performance) that is completely new. In the same way, a hearer--by virtue of his corresponding competence in the shared language--will be able to understand. This idea is not new. Descartes laid the difference between man and animal on man's use of language, particularly on man's ability "to form new statements which express new thoughts and which are appropriate to new situations."²²

If one regards verse language as an extension of the common language (which I would like to) in that it follows the code of the common language but in a special extended way, one might, I think, also say that the poet possesses in addition to his normal language competence, a special innate poetic language competence which enables him to perform in a special poetic way.²³ I am not here thinking of special uses of words, but of the special uses the poet makes of the rules of the language to generate verse forms (which, to be sure, can result in special uses of words). For his purposes, he can exploit his enhanced competence to take liberties even with rules and can generate language for verse that would not be acceptable as well formed in common language use. The poet is particularly bold in his use of transforms. Verse constantly manipulates word order and deletion transforms beyond normal rules, yet there is still communication. It is as if the poet stretched the language competence of his hearer/reader for the purpose of the particular sample of verse language that the poem provides. In order to be able to do this, there must be the common language competence innate in both the composer of the verse and his audience. H.L. Smith recognises this in his introduction to the Epstein and Hawkes paper already mentioned. He says, "The poet and his audience alike have internalized the

systems of communication OUTSIDE AWARENESS,"¹ (his capitals). One seems to be on the point of getting a linguistic statement direct from the poet's mouth when Charles Olson, in his essay on "Projective Verse" says, "But an analysis of how far a new poet can stretch the very conventions on which communication by language rests . . ." But then, unfortunately, he does not go on, but cuts off whatever he might have been going to say with, ". . . is too big for these notes." ²⁴

I have also been interested in the connection that T-grammar theory makes between language - competence and performance - and the functioning of the biological language equipment which is (as the biologists say) species specific to man.²⁵ That physiological rhythms may be connected with verse rhythm is borne out by the claim of the "projective" school of verse that there is a direct connection between breath and the verse line. This claim will be discussed later in the context of the line and in Chapter III, when I come to consider verse rhythm, I have brought in some references to the physiology of phonation as it may relate to the movement of verse. Further, it is interesting to consider the notion of a central impetus, (the inspiration?) from which the entire of a poem, including the requisite breath, is generated. Northrop Frye speaks of the poet's harnessing of his own "controlling and coordinating power (Coleridge's 'initiative') that establishes itself very early, gradually assimilates

everything to itself and finally reveals itself to be the containing form of the work." This power, Frye says, covers a complex of the "factors" of the poem of which theme is one, unity of mood is another, and "if what is produced is to be a poem in a regular metre, the metre will be a third: if not, some other integrating rhythm will be present."²⁷

In its concept of 'structure,' this paper must limit itself to the basic element, the language. Form and theme are beyond its scope. However, it is my opinion that proper comprehension of the language structure--that is, comprehension which connects, in the sense of an electric circuit, with the innate language comprehension of the person making the study--will carry with it insights into the poem's design and meaning that, without the connection at the language level, might never have been arrived at.

Throughout, my basic hypothesis is that if anything is to be said about verse structure, it must be said in language terms. The direction of the thesis is less a matter of formulating a theory than of seeing how far a purely linguistic approach can take one in the study of verse structure, and whether from such exploration any useful attitudes or linguistic tools may result.

I shall regard verse as the product of language used in a special way. In this respect, I start from

the same point as many linguistic studies. I have already referred to H.L. Smith's introduction to the Epstein and Hawkes paper. In full, his assumptions basic to discussion of poetic discourse are:

1. The spoken language and other systems used in oral communication underlie and are basic to all literary compositions.
2. The poet and his audience alike have internalized the systems of communication OUTSIDE AWARENESS. (H.L. Smith's capitals.)
3. Both the primacy of the spoken language and the special nature of the literary language in relation to it are obscured by the fact that literature is composed in an inconsistent and incomplete writing system.²⁸

Michael A.K. Halliday, in "The Linguistic Study of Literary Texts," says, "it is a prerequisite that both the theory and the description should be those used in the analysis of the language as a whole."²⁹ Seymour Chatman (whose concept of meter is as an abstraction) nevertheless starts his chapter on "The Phonological Background to Metrical Analysis" as follows:

Nobody would deny that English meter, whatever it may be, utilizes the sounds and sound sequences of the English language. Therefore, any attempt at a theory of meter is obliged to consider all features of the language which might have metrical relevance.³⁰

To the three examples quoted, one might add other studies of verse that share a common view of the language as a basis. However, not all of these

studies go in the same direction. In order to measure verse movement, Chatman, for one, separates metrical abstraction from the language "actualizations."⁴

Donald Davie invents (quite unconnected with the syntax of the main language) his own sort of supra-syntax for verse language,³¹ and S.R. Levin would have us write special base rules to account for the 'deviations' of verse from main language 'well-formedness.'³²

None of this, it seems to me, is necessary. The poet's language--as J.P. Thorne says--is part of the main language insofar as it is "the language from which it draws its lexis and its phonology."³³ And, in my view, verse syntax too draws upon the structure rules by which the main language is governed. By virtue of his special competence, the poet is able, as it were, to stretch rules to produce unaccustomed strings, but still the connections with the main language hold. The purpose of linguistic study would seem to be to make these connections explicit. One can say, for instance, that while the grammar of the main language is concerned with the generation of sentences, the grammar of verse language is concerned with the generation of lines and then proceed to state the connection in terms of the phonological rules common to both. Out of the connection between the language structure and the phonetic output come the sound patterns

which determine the verse movement, and from the expression of what these connections are comes an analysis of verse in language terms.

My assumption is that verse is made of language, my modus operandi is to suppose language rules in working to generate verse and then, against these supposed generative patterns, to examine examples of verse to reveal the underlying language rules out of which they have been fashioned. I am, as it were, examining the sculpture in terms of the stone. Stone of one sort will shatter from one direction and not from another, stone of another sort can be chipped, another has to be ground; one sort can be worked on a large scale, another only in miniature. The material is not the piece of sculpture, granted, but at the same time, the sculpture has been produced by the manipulation of the material by the artist. By the perhaps laborious examination of language features that go to make verse, and the assembling of them into the generation of hypothetical verse lines, I hope to be able to demonstrate why a piece of verse is as it is according to the language material out of which it is made. Beyond this I do not pretend to go.

It remains to consider the written form of verse. As H.L. Smith says in his third point quoted above, analysis of verse is greatly complicated by

the fact that "literature is composed in an inconsistent and incomplete writing system." This is the structuralist speaking out against the domination of print, but where the literary language under consideration is verse language, there are more obscurities yet.

Without going into the history and conventions of printing and typography--capital letters, italics, indentations and so on--and what they may convey, the fact remains that for a reading audience, the sound rhythms of verse have to be conveyed by the way a poem looks when it is printed. The rhythm that can be heard (or felt in silent reading) is contained in the line that can be seen, and theories about the sound of verse--accent, syllable, rhythm, meter, rhyme--have been developed around the printed word. Chaucer's meter, for instance, was regarded even by his admirers as "rough and irregular" until the speech sounds of the period were recovered and applied to the print.³⁴ Those linguists who wish to discuss verse in terms of both abstract metrics and language (see quotations from H.L. Smith, Seymour Chatman, and Wimsatt and Beardsley on page 2 above) pay lip service to the "primacy of language" and then apply the abstractions of metrical feet to the visual form of the words in ways that produce divisions that are phonetically

quite unnatural. Epstein and Hawkes show foot boundaries in the middle of printed words that would be realized in speech as bisyllabic free morphs with no possibility whatever of an internal juncture.

The val / our that wore / out your soul /
in the ser / vice of man³⁵

and Seymour Chatman makes division in a similar way.³⁶

If the foot is an abstraction, one can, of course, do anything with it--on paper. But is this function consistent with H.L. Smith's first point that the spoken language must underly all literary analysis? Can one speak such a division? And if it cannot be spoken, can it be called a legitimate division? To insist that such abstractions govern the making of verse seems to me as prescriptive and normative as the teacher's insistence that should have, enunciated /šUd+hæv/, is what must be said for /šUdæv/. It is only on the page that these words are always divided into two.

III ORGANIZATION OF THESIS

This thesis is organized into two main sections.

Section I

In Chapters II, III, IV and V, an analysis of language structure is considered with a view to developing linguistic tools which can usefully be applied to the

analysis of verse structure. This entails:

- a) dividing discourse into phonemic clauses on the basis of the suprasegmental features of speech. (Chapter II)
- b) considering the movement patterns of verse in terms of the suprasegmentals, the phonemic clause and the physiology of speech. (Chapter III)
- c) considering the function of the syllable in speech and in verse. (Chapter IV)
- d) considering the division of verse into lines made up of phonemic clauses and the relationship of the line-end to juncture and to breath, and the setting up of tentative rules for the generation of a verse line in abstract terms. (Chapter V)

Section II

Chapters VI and VII, and the last pages of Chapter V consist of the analysis of specific poems according to the methods set up in Section I.

- a) Pippa's Song is analysed from the printed form.
- b) Three poems by E.E. Cummings are analysed from the printed form and from a recording of the voice. (Caedmon, T.C. 1017). A graph was obtained by passing the recorded voice through

and E&M Physiograph and this graph was used in establishing juncture points according to sections where the voice was quiet. (Chapter VI)

- c) Readings of three poems by Simon Fraser University poets are analysed by breath group as well as by juncture. Here the voice graph included a curve showing chest movements for the intake of breath. Graphic versions of the poems are compared with the sound analysis and with the hypothetical reconstruction of the lines.³⁷

There was no particular reason for choosing the poems used except that the poet's reading was available. In theory, the linguistic tools developed in Section I should be applicable to any poem of any kind, and for the purpose of this paper, a poem is taken to be, to quote John Hollander, "any utterance that purports to be one."⁶

I have divided verse into two main divisions of movement pattern: 'metered' and 'unmetered' (see Section II, Chapter III) and in talking about unmetered verse, I would like to borrow terms from contemporary poetics and say that unmetered verse uses a free line in an open form. That is, that the line is free of the constraints of metrical repetition and that the form is not bound to the repetition of a line of any particular type.

The posture of this paper is that the rhythmic devices of verse derive from the poet's manipulation of his inherent language competence and that a theory of metric or versification must look for linguistic ways to express what has taken place rather than to reconcile phonology with an artificial external measurement. Also, that where verse language does not conform to what is considered well-formed in the main language, the structure of the verse language shall be considered in terms of an extension of the common language rather than as a deviation from it.

NOTESCHAPTER I, INTRODUCTION

- 1 Edmund L. Epstein and Terence Hawkes, Linguistics and English Prosody (Buffalo, NY., 1959). Studies in Linguistics, Occasional Papers, #7.
- 2 Epstein and Hawkes, (note 1, above), "Introduction" by Henry Lee Smith, Jr., p.7.
- 3 W. K. Wimsatt Jr. and M.C. Beardsley, "The Concept of Meter: an Exercise in Abstraction," PMLA, LXXIV December 1959), 585-598.
- 4 Seymour Chatman, A Theory of Meter (The Hague, 1965), p.103
- 5 Morris Halle and S. J. Keyser, "Chaucer and the Study of Prosody," College English, Vol., 28, (December 1966) #3 pp. 187-219.
- 6 John Hollander, "The Metrical Emblem," Kenyon Review XXI (1959), reprinted in S. Chatman and S.R. Levin eds., The Language of Literature (NY., 1967), p. 126.
- 7 John Nist, "Word Group Cadence: Basis of English Metrics," Linguistics, VI (1964), p. 76.
- 8 Nist (note 7, above), p. 74-75.
- 9 George Trager and Henry Lee Smith, Outline of English Structure (Oklahoma, 1951), Studies in Linguistics, Occasional Papers, #3.
- 10 Harold Whitehall, "From Linguistics to Criticism," Kenyon Review (Summer, 1956), reprinted in George Hemphill ed., Discussions of Poetry: Rhythm and Sound, (Boston, 1961), p. 80.
- 11 Henry Lee Smith, "Towards Redefining English Prosody," Studies in Linguistics, 14.68-75, #3-4 (1959).
- 12 Whitehall (note 10, above), p. 83.
- 13 Roger Fowler, "Structural Metrics," Chatman and Levin, eds., Language of Literature (note 6, above), p. 169.
- 14 David Abercrombie, Studies in Phonetics and Linguistics (Oxford UP., 1965), p. 16.
- 15 Abercrombie, (note 14, above), p. 18.
- 16 Michael A. K. Halliday, "The Tones of English," Archivum Linguisticum, XV, Fasc., 1 (1964)

17 Abercrombie (note 14, above), p. 20.

Abercrombie takes his example of silent stress in speech from Daniel Jones, Outline of English Phonetics (1932 ed.,) p. 227, and gives the example of the way Thank you is often said in British English. /kkju/ with the first /k/ functioning syllabically.

18 Abercrombie (note 14, above), pp. 21-22

19 George Saintsbury, A History of English Prosody (3 vols,) (NY.,1960), 1.82-86, reprinted in Hemphill (note 10, above), p. 50.

". . . the foot of one syllable is always long, strong, stressed, accented, what not."

To which there is a footnote:

"Except, to speak paradoxically, when it is nothing at all. The pause-foot, the equivalent of silence, is by no means an impossible or unknown thing in English poetry."

20 A specific example is the John Donne song lyric "The Expiration," in the Ferrabosco setting as it appears in the Elizabethan Song Book, Noah Greenberg ed., (NY., 1962)

The song in this setting is reproduced on the following page..

The music fits the words in a way suggesting that the chord on the accompanying instrument emphasises the silences and so produces a 'silent stress.' e.g., in line #1, before leave off and again before this last; in line #2, before and vapours, and so on

The music also supports the presence of line-end junctures and division of the lines by juncture into phonemic clauses in the way that this thesis goes on to develop.

SO, SO, LEAVE OFF THIS LAST LAMENTING KISS

FRANCESCO FERRABOSCO

AYRES 1609

Slow $\text{♩} = 48-50$

VOICE *p*
So, so, leave off this last la - ment - ing

PIANO *p*

kisse Which sucks two soules and va - pours both a - way,

cresc.
Turne thou ghost that way, and let me turne this, And

cresc.

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1

So, so, leave off this last lamenting kisse
Which sucks two soules and vapours both away,
Turne thou ghost that way, and let me turne this,
And let our selves benight our happy day,
We aske none leave to love, nor wil we owe
Any so cheape a death as saying goe.

2

Goe, goe, and if that word have not quite kild thee,
Ease me with death by bidding me goe too.
O, if it have let my word worke on me,
And a just office on a murderer doe.
Except it be too late to kill me so,
Being double dead, going and bidding goe.

JOHN DONNE: THE EXPIRATION

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let our selves be - night our hap - py

m/
day, We aske none leave to

love, nor wil we owe An - y so cheape

p
a death as say - ing goe. We aske none

139

leave to love, nor wil we owe An - y so cheape

a death as say - ing goe.

- 21 Noam Chomsky, Topics in the Theory of Generative Grammar (The Hague, 1966), pp.9-10.
- also in :
- Noam Chomsky, Aspects of the Theory of Syntax (NY., 1965), pp. 8, 24 and 27. Also p. 140 and Note #1, page 193.
- 22 Noam Chomsky, Cartesian Linguistics (NY., 1966), p. 3.
- 23 When I speak of a poet's competence, I mean in his native language. Yeats wrote indignantly to William Rothenstein (May 7, 1935) about Tagore's efforts to write poetry in English:
- Tagore does not know English, no Indian knows English. Nobody can write with music and style in a language not learned in childhood and ever since the language of his thought.
- Allan Wade ed., (London, 1954), Selected Letters of W.B. Yeats.
- 24 Charles Olson, "Projective Verse," The New American Poetry, 1945-1960 (NY., 1960), p. 392.
- 25 Eric H. Lenneberg, "The Capacity for Language Acquisition," J. A. Fodor and J.J. Katz eds., The Structure of Language: Readings in the Philosophy of Language (NJ., 1964), p 579 ff.
- 26 Olson (note 24, above), p. 388.
- 27 Northrop Frye, Anatomy of Criticism (Princeton, 1957) (Atheneum ed., 1967), p. 5.
- 28 Epstein and Hawkes (note 1, above), p. 5.
- 29 Michael A. K. Halliday, "The Linguistic Study of Literary Texts," Proceedings of the Ninth International Congress of Linguists 1962 (The Hague, 1964), pp. 302.
- 30 Chatman (note 4, above), p. 30.
- 31 Donald Davie, Articulate Energy (NY., 1958), Ch. VIII
- 32 Samuel R. Levin, "Poetry and Grammaticalness," Proceedings of the Ninth International Congress of Linguists 1962, (The Hague, 1964).
- 33 J. P. Thorne, "Stylistics and Generative Grammars," Journal of Linguistics, I (1965), pp. 55-56.

- 34 F. N. Robinson ed., The Works of Geoffrey Chaucer,
(Cambridge, Mass., 1957), page xxx.
- 35 Epstein and Hawkes (note 1, above), p. 37
- 36 Chatman (note 4, above), p. 121.

The mul / titu/dinous seas / incar/nadine

These foot boundaries are given, Chatman says, to conform to "the running disposition of ictus and non-ictus established by preceding sequences." (p. 121). It is true that he is using this line as an argument for the necessity of "some extralinguistic phenomenon to produce conformity," although he does not give the scansion of the line before, or of the line after. The line before is:

Clean from my hand? No; my hand with rather

which could be divided into five, though it falls much more naturally into what in speech would probably be three phrases.

However, it is in the lines that come after that it seems most contradictory to look for conformity. They are:

Making the green one red.

My hands are of your colour, but I shame
Re-enter Lady Macbeth

- 37 Morris Halle and K. N. Stevens, "Analysis by synthesis," Seminar on Speech Compression and Processing (Bedford, Mass., 1959).

Wherever I used both sound and graphic representations of a poem, the result was two incomplete analyses which in some cases completed and in some cases complemented each other. I would make some sort of guess from one point of view or the other as to how the phrase pattern might have been generated and how it might then be compared to the other medium and I would see how it fitted. This might be considered a version - although a rather skewed version - of the 'try and see' method set up by Halle and Stevens in the above paper. To paraphrase very briefly, the method is that, where a code is not known, a code is guessed and a message produced by the guessed-at code is compared with the message decoded. This procedure, the paper points out, is "by no means unusual. It is used, for instance, in long division. Since we do not, in fact, know the inverse of the multiplication function, we cannot calculate the quotient directly. Instead we guess at the answer, multiply our guess by the divisor and compare it with the dividend." (p. 2).

CHAPTER II

STRESS-PITCH-JUNCTURE AND THE PHONEMIC CLAUSEDIVISION OF DISCOURSE: THE PHONEMIC CLAUSE

George Trager and Henry Lee Smith in the Outline of English Structure of 1951¹ arrived at their division of English discourse into the unit of the phonemic clause by observing first "marked differences in loudness" with which segments were spoken. This feature they categorized into the four levels of stress and went on to observe variations in the relative levels of the pitch of the voice² which they connected with what they called 'terminal junctures,' or ways of ending utterances. These three linguistic features, the suprasegmentals, represent the sound features of language that are not part of the segments, but which are nevertheless essential to discourse. It is these suprasegmentals that can be heard in the

speech of a language one cannot understand; they are the "sound of sense" that Robert Frost heard in the "voices behind a door."³ Even if one cannot hear or cannot understand what is being said, one can still hear the suprasegmental sound pattern of the speech;⁴ the pauses of silence and the rise and fall and emphasis of the voice. These three features: juncture, pitch and stress, are shown by the Trager-Smith analysis to combine to produce the natural, fundamental divisions of speech. Not only the greater divisions that can be heard as pauses of silence, but also the subtler divisions produced by the underlying phrase structure of the language that--when combined with speech segments--are essential to the message being conveyed. Without following all the stages of development, one can pick up at the point where the Outline isolates the phonemic clause and the abstractions, the phonemic phrase and the phonemic word. (Abstractions because the phonemic phrase and the phonemic word are isolated by taking away the suprasegmentals and segments cannot exist in actuality without suprasegmental features.) The phonemic clause, however, is not an abstraction, but is identified and delimited in terms of its suprasegmental features and accordingly provides a unit convenient for this thesis. The full identification of the phonemic clause as given in the Outline, is quoted in note 5,

and can be paraphrased as follows: a phonemic clause is a section of segmental phonemes in normal transition, which is bounded by terminal junctures and which contains within it a pitch contour, one and only one primary stress and as many secondary stresses as there are internal plus junctures, but no more.⁵

The stress-pitch-juncture features will be discussed shortly, but meanwhile there is something more to be said about the functioning of the phonemic clause in the dividing of discourse.

The Trager-Smith Outline provides a description of the phonemic clause. One can say, looking at this description, that when speech divides, these patterns of juncture, pitch and stress are present. But one cannot reverse the statement and say that these patterns of juncture, pitch and stress can be used in analysis to divide speech. Speech divisions are formed according to the underlying structure and the patterns classified by Trager-Smith are symptoms of the division, not the cause.⁶ This kind of observation takes us beyond descriptive linguistics. It is not a matter of "data collecting," but a matter of postulating what is going on to produce the phonetic data collected.

PERCEPTION & PHYSIOLOGY OF SUPRASEGMENTALS

Whitehall speaks of the Trager-Smith description

of the suprasegmentals and the phonemic clause as providing "segmentalizers" and "scissors of linguistic perception,"⁷ but it would be mistaken to think that the suprasegmentals can necessarily be physically heard and the division between phonemic clauses set up accordingly. The grosser junctures that involve an interval of silence can be heard all right, so can phonemic pitch contours that signal, say, questions, and so can lexical stress, but not all junctures are physically defined,⁸ and there can be all kinds of disagreement about the hearing of pitch levels and degrees of stress.⁹ The limitations of the perception of language sounds will be referred to again, but in the context of the phonemic clause. Let me quote from Chomsky's answer to A.H. Marckwardt at the Second University of Texas Conference in 1957:

Since ...the phonetic contour is largely an automatic reflection of the syntactic structure, it follows that anyone who understands an utterance and thus, in particular, has determined its surface structure, should be able to predict the phonetic contour by rules that constitute part of his linguistic competence. He will, then, 'hear' what these rules predict, as long as this is not in too violent disagreement with the physical facts.¹⁰

It is useful also to consider the physiological divisions of the production of discourse, and here (as mentioned in Chapter I), I base my attitude on the work of Abercrombie, and quote from his paper, "A Phonetics View of Verse Structure."

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Speech, as is well known, depends on breathing; the sounds of speech are produced by an air-stream from the lungs. This air-stream does not issue from the lungs in a continuous flow, as might be thought at first. The flow is 'pulse-like': there is a continuous and rapid fluctuation in the air-pressure which results from alternate contractions and relaxations of the breathing muscles. Each muscular contraction, and consequent rise in air-pressure, is a chest-pulse (so called because it is the intercostal muscles in the chest that are responsible): and each chest-pulse constitutes a syllable. This syllable producing process, the system of chest-pulses, is the basis of human speech.¹¹

Abercrombie is writing in 1961, and he refers for "further details" to earlier work by R.H. Stetson, Motor Phonetics (1951).¹² Stetson compares the action of the lungs in producing speech to the workings of a hand-operated bellows with the lungs producing syllables on the puffs of outgoing air in the same way as hands produce puffs from bellows. The circumstances of Stetson's experiments are quite painfully contrived (his poor speakers are trussed up in all manner of contraptions and could not conceivably produce anything like a natural flow of speech), but the physiology of the syllable is there. However, as Abercrombie goes on to point out, there is more to the sound pattern of English than syllables.

This, however, is not the whole story of the production of the air-stream which we use for talking; there is in addition a second system of pulse-like muscular movements on which in part it depends. This system consists of a series of less frequent, more powerful contractions of the breathing muscles which every now and then coincide with, and reinforce, a chest pulse, and cause a more considerable

and more sudden rise in air-pressure. These reinforcing movements constitute the system of stress-pulses, and this system is combined in speech with the system of chest-pulses.

The rhythm of speech is a rhythm of these two systems of pulses: it is a product of the way they are combined in producing an air-stream for talking. The rhythm is already in the air-stream, in fact, before the actual vowels and consonants which make up words are superimposed on it.¹¹

The stronger chest pulses described by Abercrombie produce the linguistic feature stress. Tension in the vocal cords produce the linguistic feature, pitch, which, combined with the feature juncture (which does not necessarily have a physical realization⁸), provides a linguistic way of dividing discourse into natural divisions in which phonology goes along with physiology.

Breathing can also be thought of as necessitating a division of discourse. If speech is produced on the expiration of air (and it almost always is, except for exclamations like whew, and occasionally the start of a new stretch of discourse while the last of the air is still being drawn in--see respiration graphs in Chapter VII), there must be a break in discourse during which air is taken in and the lung pressure built up. The role of breathing in verse movement will be discussed later. Here, in its connection with the phonemic clause, it is enough to say

that breathing accommodates itself at an unconscious level so that there may be inspiration at the terminal juncture at which the underlying structure (i.e., the sense) calls for a substantial break in discourse.

EXTENSION OF PHONEMIC CLAUSE DIVISIONS INTO DIVISIONS FOR VERSE

R.B. Stockwell's intonation rules¹³ on which I shall base my own tentative rules for the generation of a verse line (Chapter V), demonstrate the connection between the sentence structure and the phonemic clause.¹⁴ By including IP (intonation pattern) in the constituent structure rules, when sentences are embedded in the matrix sentence, or when sentences are changed or moved by transform, the IP goes with them to produce junctures (IP being made up of a pitch Contour plus a Juncture Point) as part of the surface structure of the matrix sentence. This is the operation for prose or speech; the normal language operation.

My rules for the generation of the verse line will be set up on the basis of an extended use of juncture and the hypothetical lines so derived will be matched against existing verse. This is done in order to test out the value of my generation as a means of revealing the language basis of the movement of the verse. This is done somewhat after the fashion

of the 'try and see' model Chomsky proposes for the teaching of foreign languages, in which he says, "we might try to develop a sentence-recognizing device (that is, a perceptual model) that incorporates both the generative rules of the grammar and a 'heuristic' component that samples an input to extract from it certain cues as to which rules were used to generate it, selecting among alternative possibilities by a process of successive approximation."¹⁵ My version of this process will be to combine the division of discourse into phonemic clauses with the division of verse into lines in order to express the choices which might have been made by the poet in generating his verse. The model used to 'sample' my derivations will be the voice of the poet reading his own poem, and from this, I shall select alternative possibilities in my analysis of the verse structure of the poem. This is not a formal process in the sense of the "sentence recognizing device" suggested by Chomsky, but rather a feeler towards setting up objective ways of getting at the structure that is in the verse language of any particular poem.

Before going further, it is necessary to say something more about the function and perception of the suprasegmental features by which the phonemic clause is identified and delimited.

FUNCTION AND PERCEPTION OF STRESS

Constitution of stress

The conception of 'stress' as it is commonly (not linguistically) used is that to stress something is to emphasise it. Quite apart from the gestural uses in emphasis, astonishment, etc., we know English stresses words, parts of words and parts of words in phrases. And we know that this stress is essential to the meaning we have to signal.

Daniel Jones, the British phonetician, says:

Stress may be described as the degree of force with which a sound or a syllable is uttered. It is essentially a subjective action. A strong force of utterance means energetic action of all the articulating organs; it is usually accompanied by a gesture with the hand or head or other parts of the body; it involves a strong 'push' from the chest wall and consequently a strong force of exhalation; this generally gives the objective impression of loudness.¹⁶

Leonard Bloomfield says, quite simply:

...in English when we combine several simple elements of speech into a word of two or more syllables we always use a secondary phoneme of stress which consists of speaking one of these syllables louder than the other or others.¹⁷

There are three aspects for the discussion of stress (and indeed of all suprasegmentals) that must be thought of separately:

how it is produced and what it consists of
 how it functions in the language
 how it is perceived.

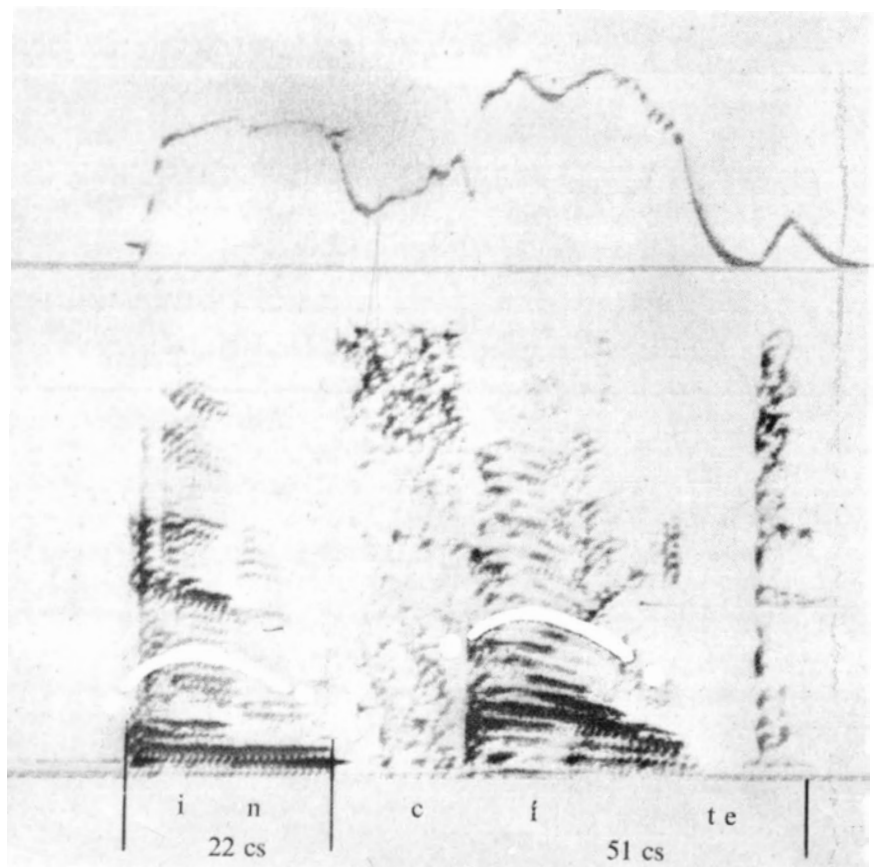
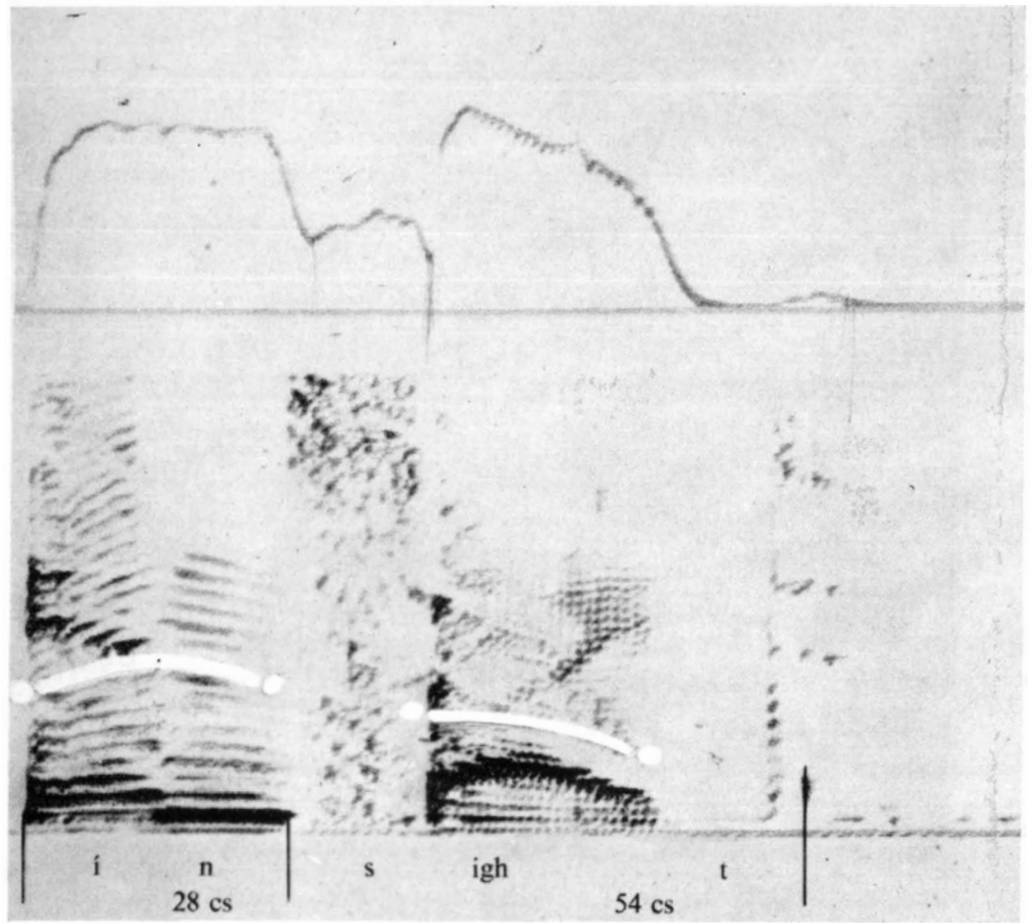
The quotation from Daniel Jones above includes all three aspects whereas the quotation from Leonard Bloomfield expresses the phonemic function of stress but avoids saying anything about how 'loudness' is to be understood or how it might or might not be perceived.

The production of stress was outlined above as part of the physiology of the phonemic clause (see page 28), but it remains to be seen how much this impression of 'loudness' is due, in addition to the force of the stress-pulse, to the stressed syllable being said at a higher level of pitch or prolonged for a greater length of time. There is a physiological likelihood of a higher frequency in the pitch of the voice in a stressed syllable on account of the greater air pressure employed for the stress-pulse. In the same way, a stressed tense syllable can well be prolonged by increased air pressure.¹⁸ Jones asserts that pitch is always within the control of the speaker, and that it does not necessarily accompany stress;¹⁹ and Bloomfield dismisses the combination of pitch with stress as a purely gestural enhancement.²⁰

D.B. Fry worked on stress from the aspect of perception, and stated that differences of stress are perceived by the listener as variations in a "complex

pattern bounded by four psychological dimensions: length, loudness, pitch and quality."²¹ He tested listeners on word pairs like subject, object, digest, and he interpreted his results as showing that both "duration and intensity act as cues in stress judgments ...[and] the tendency was for a higher syllable to be heard as stressed in preference to a lower one."²² However, what should be particularly noticed is that these words were produced and heard not in context but in isolation. The experiments were set up as an "attempt to explore three physical dimensions which appear important to stress judgments" (my italics). That is to say, the possibility was eliminated of the listener hearing what the rules of the syntactic structure might predict. (See Chomsky's answer to Marckwardt, page 27 above.)

There is a curious example of what can happen in the absence of context in Seymour Chatman, A Theory of Meter. In discussing the value of the spectrograph in metrical analysis, Chatman prints the following spectrograms of the words insight and incite.²³ He points out that the curve in the upper part of the graph is a display device which provides²⁴ a simpler version of the amplitude information conveyed by the relative darkness of the recording of the syllables in the complex fold pattern of the graph (which includes pitch at each instant "according to the relative height



Seymour Chatman, A Theory of Meter

of the mark on the paper").²⁵ Further on, he says, "the machine conveniently and accurately accounts for all three variables involved in metrical analysis,"²⁶ i.e., (for Chatman's purposes) pitch, stress and duration.

Whether or not the amplitude curve contains frequency or whether it is just a measure of noise does not, I think, really matter here. The curious observation is that for the word insight (for which there is no question of where, from the point of view of language function, the stress must fall), the amplitude curve shows a higher peak for the second syllable than for the first. I do not know the circumstances of this experiment, but I should guess (by the blankness of the paper before and after the part on which the recording is graphed) that these words were spoken in isolation, and that there was a doubt (perhaps unconscious) in the speaker's mind whether, in the absence of context, what he was saying was in sight (the boat is in sight), or insight (I admire his insight).

When one considers stress from the point of view of language function, all English speakers know it is part of the language code by which they make themselves understood. When words in the lexicon have identical segments (like D.B. Fry's pairs of words),

stress signals their category [+ noun] or [+ verb] and so their meaning. In context, even the sorting out of the levels of stress and the phonetic effects of stress placement (vowel reduction, etc.,) are properly effected intuitively by the speaker and properly interpreted by the hearer, although the operation may not have an observable physical basis. To quote Chomsky again:

We might propose that the hearer uses certain selected properties of the physical signal to determine which sentence of the language was produced and to assign to it a deep and surface structure. With careful attention, he will then be able to 'hear' the stress contour assigned by the phonological component of his grammar, whether or not it corresponds to any physical property of the presented signal. Such an account of speech perception assumes, putting it loosely, that syntactic interpretation of an utterance may be a prerequisite to hearing its phonetic representation in detail.²⁷

Chatman's spectrogram seems to me to exactly demonstrate the truth of this observation. There was no syntactic structure to interpret and the machine representing the hearer picked up the suprasegmentals not of the 'word' intended, but of the same sequence of phonemes as were in the word, but as if they were in a different syntactic context.

Stress has to be thought of in two ways: as lexical stress or the native stress that a word might carry in isolation in, as it were, its slot in the lexicon, and also according to the adjustment of stress

levels that results from the combining of lexical items into phrases and sentences. The M.I.T. paper, "The Morphophonemics of English" (1960), says:

Every morpheme in isolation has its own stress distribution (which is governed by certain morphological and phonetic factors). This stress assignment on the morphemes, however, does not remain fixed; it may be modified by the constituent structure of the utterance in which the morpheme is found, where, again, morphological and phonetic factors play a role.²⁸

This paper presents cyclic rules for stress assignment, but there has, it seems, been a lot more transformational work done on both stress and the other suprasegmentals since that time. However, at the time of writing (September, 1967), it is still difficult to know where to go for information. The long promised Chomsky and Halle Sound Pattern of English and the Halle and Kayser Evolution of Stress in English have still not been published, although both books are referred to in various places as "forthcoming." There are references to the work in progress in several publications-- usually as part of papers on some other related topic-- but these references are short, slanted to the subject of the paper and declared to be simplifications. Still, for the moment, they are all there is to go on.

The following is a brief outline of what is proposed--with a somewhat fuller account in note 29.

Levels of stress are assigned in the following way:

- 1) the surface structure of a terminal string is expressed according to its P-marker in a system of interlocking brackets.

Example 1

S[NP[N John]N]np[VP[V saw]V[NP[N Bill N]NP]VP]S

- 2) cyclic rules are applied to segments inside innermost brackets.
- 3) innermost brackets are erased.
- 4) rules are applied again, and so on until all brackets are removed.

Rules (which apply in the order given) in simplified form are:

- (A) - a substantive rule that assigns stress in initial position in nouns (also stems) under very general circumstances.
- (B) - a nuclear stress rule that makes the last main stress dominant, thus weakening all other stresses in the construction.
- (C) - a general rule of stress adjustment that weakens all nonmain stresses by one.

Applying the rules to Example 1 would give the following stages:

1) S [NP Jóhn] NP [VP sáw [NP BÍll] NP] VP] S

- with each monosyllable bearing lexical stress and insulated from the others by brackets.

11) S [J^hohn [VP s^haw B^hill] VP S

- with nuclear stress applied to the last main stress (right-most stress peak) and primary reduced to secondary on saw by Rule (C), and with John still insulated by brackets.

111) S [J^hohn s^haw B^hill] S

- the primary stress stays with the last main stress, Rule (C) operates to reduce John to secondary and saw to tertiary.

This example is, of course, a simple one but it illustrates the necessity of working outwards from the P-marker. It is the fact that saw and Bill come together as part of VP (before they join John in the complete sentence) that produces the tertiary stress on saw while John is only reduced by one degree to secondary. According to the transformational grammarians, rules like this aim to be an expression of the speaker's (or hearer's) 'tacit' or 'latent knowledge' which enables him to 'know' the stress contour of innumerable expressions which he may never have heard before.³⁰

FUNCTION AND PERCEPTION OF PITCH AND JUNCTURE

The Trager-Smith Outline sets up, as already mentioned, pitch and juncture as separate phonemes of English. It sees pitch as functioning linguistically

as a contour of varying intonation levels extending over a section of discourse with terminal junctures functioning as different ways of breaking or ending sections. Minimal pairs (or minimal sections) are given to illustrate the difference in meaning brought about by using alternative pitch contours or different terminal junctures. An intonation contour is said to be made up of a pattern of pitch levels, and terminal junctures are divided into three kinds: terminal rise, terminal sustain and terminal fade.

Although pitch and juncture may be phonemes of the language and although we know very well that, say, a high pitch level combined with a terminal rise means a question and a low pitch level followed by a terminal fade does not, it is as mistaken to think that pitch and juncture can be considered or perceived in isolation as it was in the case of stress. The ability to perceive pitch levels in any absolute sense was attacked by Philip Lieberman³¹ in an experiment (extending over two years) in which trained linguists were asked to transcribe from a tape recording pitch levels according to the Trager-Smith notation. The recording started as a complete message, but by mechanically taking out everything except pitch levels, was left as a sort of wordless melody. The transcriptions offered varied so much that it was concluded that there was "no basis

for regarding the Trager-Smith pitch levels as perceptual manifestations."³² It appears that although the hearers could agree in perceiving that there was an intonation pattern with a contour and a juncture point, they could not agree on what the pitch levels of the contour were. In his final conclusion, Lieberman makes a comment that lines up with what Chomsky had to say about the perception of stress (page 36 above).

...the intonation of a sentence can be predicted if one considers three sets of factors (1) the physiological constraints imposed by the human respiratory system, (2) the emotional state of the speaker, and (3) the ultimate recoverability of the Deep Phrase Marker that underlies the final phonological shape of the sentence.³³

That is to say, as for stress, if you know the syntax (the P-marker), the intonation contours and the junctures can be predicted.

The features of juncture and pitch set up by the Trager-Smith Outline have been used as part of a generative theory of intonation by R.B. Stockwell (1960)³⁴ and it is this work that will be used later in this thesis. It is interesting that R.B. Stockwell was one of the linguists who transcribed pitch for the Lieberman experiment (1965). If anything, Lieberman's findings tend to strengthen rather than detract from Stockwell's theory.

In broad terms (for details see Chapter V),

Stockwell derives the intonation pattern (which he sets up as being composed of a pitch contour combined with a junction point) along with the P-marker. He separates contour into two main groups on the basis of Discontinuity and Continuity with the separation determined by the last, or the last two pitch levels, combined with a terminal juncture. On this basis, he provides what he calls a "well motivated definition" for "normal intonation" which he supplements by transforms to derive intonation patterns for questions, emphasis, etc., and morphophonemic rules for the assignment of stress. It should also be noted that working the intonation pattern along with the derivation of the P-marker of the sentence produces the suprasegmental pattern appropriate to compound sentences in which constituent sentences (subordinate clauses) are derived within the matrix sentence.³⁵

To sum up: this chapter has considered the suprasegmental element of language and the division of discourse into phonemic clauses. The term phonemic clause will be used from here on as a phonic unit bounded by terminal junctures, containing one primary stress and one or more levels of pitch. Discussion of the perception of suprasegmentals showed that the complete signal would only be received in full context,

and that there is no perception of suprasegmentals in absolute terms, but that what can be perceived in a context of comprehension is relative degrees of stress and relative levels of pitch within intonation patterns.

N O T E S

CHAPTER II, STRESS-PITCH-JUNCTURE AND THE PHONEMIC CLAUSE

- 1 George L. Trager and Henry Lee Smith, Outline of English Structure (Oklahoma, 1951), Studies in Linguistics, Occasional Papers, #3.
- 2 Trager-Smith (note 1, above), p. 41.
- 3 L. Thompson ed., Selected Letters of Robert Frost (NY., 1964), letter of July 4, 1913, to John T. Bartlett, #53, p. 79. In this letter Frost says (in part):

I alone of English writers have consciously set myself to make music out of what I may call the sound of sense . . . the best place to get the abstract sound of sense is from voices behind a door that cuts off the words . . . those sounds are summoned by the audile imagination and they must be positive, strong and definitely and unmistakably indicated by the context.

- 4 R. Wellek and A. Warren, Theory of Literature, (NY., 1942) (3rd., ed. 1962), p. 158.

These authors make the undeniable point that in listening to a foreign language we do not hear "pure sound" but impose our phonetic habits on it as well as hear, of course, the meaningful intonation given to it by the speaker or reader.

- 5 Trager-Smith (note 1, above), Section 1.73, p. 49.

1.73 In the material examined above for the setting up of stress and juncture phenomena, it was observable that any sequence of vowels and consonants in normal transition or including plus junctures has only one primary stress, all other syllables having one of the other stresses. On the other hand, between any two successive primary stresses there is always one of the terminal junctures, and every primary stress is followed by one terminal juncture at some point subsequent to it.

Any utterance made in English ends in one of the terminal junctures. If it is a minimal complete utterance it has no other terminal junctures within it. In that case it must have one or more pitch phonemes, one --AND ONLY ONE--primary stress, and may have one or more other stresses and one or more plus junctures. If there are plus junctures, then there may be as many secondary stresses as there are pluses, but not more, and there may be less. Such a minimal complete utterance may be called by the technical term PHONEMIC CLAUSE.

- 6 This notion is fundamental in the generative theory of phonology. The essential connection between the underlying structure and the analysis of the phonetic output appears in all the literature. For instance, Noam Chomsky, M. Halle and F. Lukoff, "On accent and juncture in English," For Roman Jakobson, Morris Halle ed., (The Hague, 1956), p. 67.

to evaluate a phonemic transcription, or to prepare one, the linguist must know the morphology and syntax, as well as the phonemes of the language.

Or:

Noam Chomsky, Topics in the Theory of Generative Grammar (The Hague, 1966), p. 82:

these rules are 'transformational' in the technical sense of linguistic theory, in that they take into account the phrase structure of the string to which they apply, and not just its linear form as a sequence of symbols.

Or again:

Noam Chomsky, "The formal nature of Language," Appendix A, E. H. Lenneberg, The Biological Foundations of Language (NY., 1967), p. 415:

the phonological component of a grammar consists of a sequence of rules that apply in a cyclic manner . . . to assign a phonetic representation to a surface structure. The phonetic representation is a matrix of phonetic feature specifications and the surface structure is a properly labeled bracketing of formatives which are, themselves, represented in terms of marking of categorial distinctive features..

- 7 Harold Whitehall, "From Linguistics to Criticism," Kenyon Review, (Summer, 1956), reprinted in George Hemphill ed. Discussions of Poetry: Rhythm and Sound (Boston, 1961), p. 79
- 8 Chomsky, Topics in the Theory of Generative Grammar (note 6, above), p. 85-6.
- 9 D. B. Fry, "Experiments in the Perception of Stress", Language and Speech, 1-2, (1958)
- Phillip Lieberman, "On the acoustic basis of the Perception of Intonation by Linguists," Word, Vol. 21, #1, (April 1965), pp40-45.
- and others.
- 10 Chomsky, Topics, (note 6, above), p. 88.

- 11 David Abercrombie, Studies in Phonetics and Linguistics (Oxford UP., 1965), pp. 16-17.
- 12 R. H. Stetson, Motor Phonetics (Amsterdam, 1951), p. 1.

When the chest is slightly inflated for speaking, the air is not under pressure; like a hand bellows for blowing the fire, the volume is increased, but the nozzle is open and there is no flow of air; so the mouth and the glottis may be open as in whispering, but there is no flow of air from the inflated chest.

If one makes quick strokes of the hands while holding the inflated hand bellows, the nozzle emits little air pulses; as the quick strokes are repeated the air pulses reduce the volume of air, and the arm muscles must bring the boards of the bellows closer and closer to accommodate for the loss of air. There has been no valve action; no palate has started or stopped the flow of air.

If the hand bellows is connected with the reed of an artificial larynx, the reed will sound for each air pulse from the nozzle; it is the quick movements of the hands which release and arrest the air pulse voiced by the reed.

- 13 R. B. Stockwell, "The Place of Intonation in a Generative Grammar of English," Language, 36.360-67, (July-September 1960), reprinted in Harold B. Allen ed., Readings in Applied English Linguistics (NY., 1964), p.192-200.
- 14 Stockwell (note 13, above), p. 198.
- 15 Noam Chomsky, "Explanatory models in Linguistics," Logic, Methodology and Philosophy of Science, Proceedings of the 1960 International Congress (Stanford UP., 1962), pp. 528-550.
- 16 Daniel Jones, Outline of English Phonetics (Cambridge, Eng., 1964 ed.), #909, p. 245.
- 17 Leonard Bloomfield, Language (NY., 1933), p. 90.
- 18 Roman Jakobson, C. G. M. Fant and M. Halle, Preliminaries to Speech Analysis (Cambridge, Mass., 1951)(6th ed., 1965), p.59.

The attentive analysis of the tense/lax feature discloses, however, an identical tripartition of each of the two classes. The three types of prosodic feature which, following Sweet, we have termed tone, force, and quantity, and which correspond to the main attributes of sound sensation - pitch, loudness, and perceptual duration ...

- 19 Daniel Jones (note 16, above), Note #12, page 246.

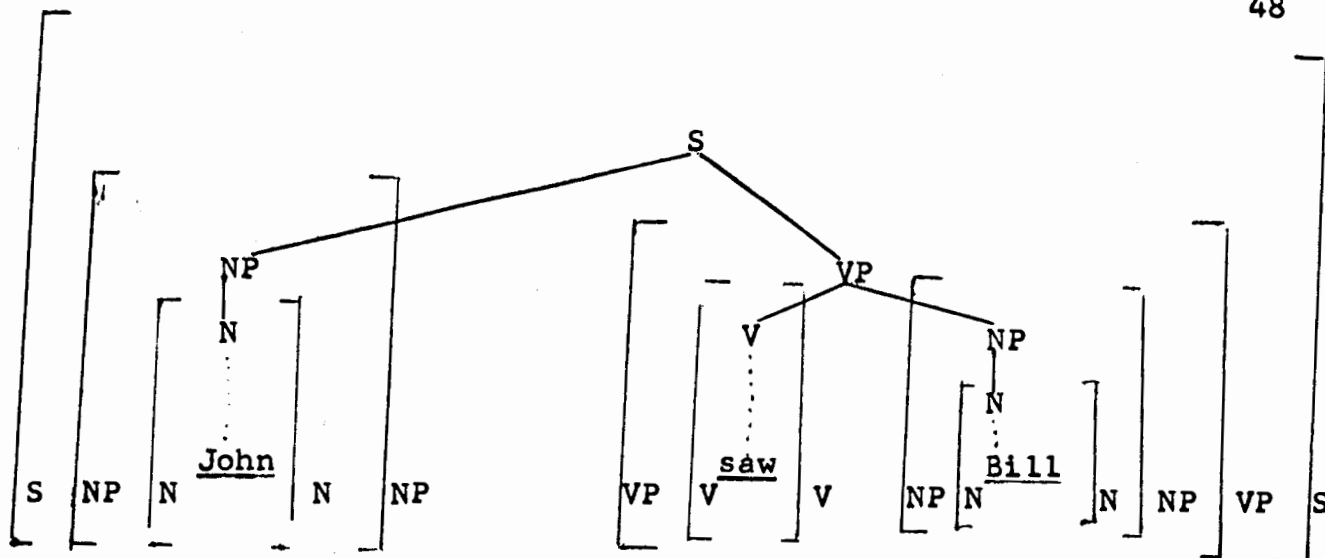
- 20 Bloomfield(note 17, above), Note #13, p. 91.
- 21 D. B. Fry, "Experiments in the perception of Stress,"
Language and Speech, 1-2 (1958), p. 126.
- 22 D. B. Fry (note 21, above), p. 151.
- 23 Seymour Chatman, A Theory of Meter (The Hague, 1965),
plate to face page 92.
- 24 Chatman (note 23, above), p. 93
- 25 - p. 93.
- 26 -- p. 94.
- 27 Noam Chomsky, "The Formal Nature of Language," Appendix A,
Eric H. Lenneberg, Biological Foundations of Language (NY.,
1967), p. 414.
- 28 Noam Chomsky and M. Halle, "The Morphonemics of English,"
Quarterly Report, Massachusetts Institute of Technology,
#58, (July 15, 1960), p. 276.
- 29 Summarized extract from N. Chomsky, "Structure of the
Phonological Component," Appendix A, "The Formal Nature
of Language," in E. H. Lenneberg, Biological Foundations of
Language (NY., 1967).

"Assignment of Stress in English," pp.411 ff.

The rules set out here are said to be a simplified version of
the full development. In essence what is proposed is this:

- the phrase structure of the clause is determined
by the regular generative method and the surface
structure is expressed in a series of interlocking
brackets representing the dominant nodes of the
phrase structure

- Chomsky's first example John saw Bill
demonstrates the bracketing convention



- two rules are applied cyclically

- in the first cycle the rules are applied to the "maximal continuous part of the surface structure containing no internal brackets," (i.e. the innermost sections).

- when the rules have been applied the brackets are erased and the rules applied again in the new 'maximally continuous part.'

RULES, (p. 412).

"1. Assign primary stress to the left-most of two primary stressed vowels, in nouns.

2. Assign primary stress to the right-most stress peak, where a vowel V is a stress-peak in a certain domain if this domain contains no vowel more heavily stressed than V."

Rule 1, "applies to nouns with two primary stresses;"

Rule 2, "applies to a unit of any other kind. The rules apply in the order" (1)(2), "in the cyclic manner described above. By convention, when primary stress is assigned in a certain position, all other stresses are weakened by one."

To paraphrase my understanding of this section: it must be assumed that formatives come out of the lexicon bearing lexical stress and that rule (1) assigns stress to compounded nouns like the example given: the N blackboard as opposed to the NP black board. So long as primary stressed vowels remain insulated by brackets they retain their lexical stress but as the brackets come away one by one to make the phrase group, primary stress is assigned by rule and all other stresses in the phrase are reduced by one. It is particularly elegant to see this happening

to produce an unstressed syllable.

To quote again, (p. 413), "Equipped with the principle of the cycle and the two rules, a person will know the proper stress contour for 'John's blackboard eraser' and innumerable other expressions which he may never have heard previously."

To which a note (#19, p. 440) reads:

"As earlier we refer here to 'tacit' or 'latent knowledge' which can, perhaps, be brought to consciousness with proper attention but is surely not presented to 'unguided intuition.'

30 Chomsky, "The Formal Nature of Language" (note 29, above), p.413

There is little doubt that such phenomena as stress contours in English are a perceptual reality; trained observers will, for example, reach a high degree of uniformity in recording new utterances in their native language. There is, however, little reason to suppose that these contours represent a physical reality. It may very well be the case that stress contours are not represented in the physical signal in anything like the perceived detail.

31 Philip Lieberman, "On the Acoustic Basis of the Perception of Intonation by Linguists," Word, 21.53, #1, April (1965).

... the results of this experiment suggest that the phonemic pitch levels and terminal symbols of the Trager-Smith system often have no distinct physical basis. The linguist infers their presence from his knowledge of the transcriptions that the Trager-Smith system usually used for certain combinations of words. The same comments seem to apply to secondary and tertiary stresses. Moreover, the results of this experiment indicate that there is no basis for regarding the Trager-Smith pitch levels as the perceptual manifestations of either absolute or relative fundamental frequency ranges except for certain contours that recur quite frequently in normal discourse. However, these contours appear to be perceived as complete entities. When other intonation contours occur, the Trager-Smith notation becomes inconsistent and has no reasonable relationship to those attributes of the physical signal which it supposedly is transcribing.

32 Lieberman (note 31, above), p. 53

38 - p. 54

34 Stockwell, (note 13, above).

35 - p. 198.

CHAPTER III

TIME, RHYTHM, METER AND MOVEMENTGENERATION OF PHONETIC OUTPUT

The generation of sentences can be thought of as a process of making choices through a series of stages. The speaker knows what he wants to say, the generative rules are part of his tacit language knowledge and he combines the two to produce well-formed meaningful sentences. In the same way, a poet composing verse must make generative choices. He produces sentences, but sentences that must be shaped to a particular pattern.

The impression of movement in speech is received from the patterning of the suprasegmentals. The stop and go of the junctures, the rise and fall of the voice pitch and the recurring peaks of the stressed syllables and all these are generated according to the syntax underlying the surface structure. That is, the application of the rules of the phonological component

to the formatives of the syntactic surface structure produce the phonetic representation of the string.¹ This is part of the operation of the grammar of the language, and except when low level transforms call for, say, question or emphasis, a speaker need not pay deliberate attention to the arrangement of suprasegmentals.

The poet, on the other hand, when he generates sentences for verse, must have the phonetic end product already in mind when he makes his generative choices. He shapes his sentences around a preconceived pattern that may be based on a variety of effects, but all of them intended to be present in the phonetic output. This preconceived pattern is the arrangement of speech sounds which produces the sound pattern of the poem, part of which is the movement and part the segmental effects of vowel and consonant sounds. There can be different kinds of movement for different poems. The poet makes his choice and the movement pattern chosen becomes the characteristic movement of the poem. Sometimes this involves rhythmic repetition and sometimes it does not.

This is not the way language is produced in common use. Unless he wants to signal a question or some gestural emphasis (and even these apparently superficial operations are now being thought of in

terms of choices in the deep structure)²; a speaker decides what he wants to say and he says it and the phonetic output is produced automatically as part of the package deal of the operation of the language. He may say /bæθ/ or /baθ/, he may stress inquiry /'Inkwəri/ or /Inkwáiri/, or he may drop his aitches or end his sentences with rising pitch (as the Welsh are supposed to), but whatever his phonetic output may turn out to be, he will not--in ordinary circumstances--think about it or try to manipulate it.

But this is exactly what the poet, in his use of verse language, has got to do. He sets out--according to his extended competence in the verse extension of his native language--to organize his phrase structure so that the phonetic output may serve the purpose of his poem. Sometimes, it seems, he is set back by the thought that the sounds he has been feeling for may not be in other people's speech. An instance of this is the footnote Yeats puts to his Remorse for Intemperate Speech. Each of the three stanzas of this poem ends similarly. My fanatic heart in stanzas one and two; A fanatic heart in stanza three. The footnote concerns the word fanatic and says, "I pronounce 'fanatic' in what is, I suppose, the older and more Irish way, so that the last line of each stanza contains but two beats."³ What he is asking for is, I think, in my parlance, that a juncture is needed between

fanatic and heart to produce two primary stresses (beats).

There are several instances of Yeats deliberating about the forces that the language exerts. He speaks in a letter to H.J.C. Grierson of the "natural momentum in the syntax,"⁴ and in another letter to Dorothy Wellesley he talks about the 'formula,' "Music, the natural words in the natural order,"⁵ and I have already quoted his letter in which he says "nobody can write with music and style in a language not learned in childhood and ever since the language of his thought." (Note 23, to Chapter I).

Another example of Yeats' dialogue between intuition and awareness is quoted by John Thompson.⁶ Yeats sent a first draft of Those Images (later published in Last Poems, 1936-1939) to Edith Shackleton Heald. In the accompanying letter, he discussed the last stanza, which John Thompson quotes as:

I never bade you go
To Moscow or to Rome
Turn from drudgery
Call the Muses home.

In the letter, Thompson quotes him as saying:

When you read this last poem of mine, be careful to get the scansion of the third line of the second stanza right. There must be an accent on from.

- Túrn - from drúdgery

You will notice how bothered I am when I get to prosody - because it is the most certain of my instincts, yet it is the subject of which

I am most ignorant. I do not even know if I should write the mark of accent or stress or thus`.*

One might guess Yeats knew that in speech, from is more often than not unstressed and that, the syllable being unstressed, the vowel sound in from can become reduced to the almost non-existent schwa /ə/ so that his line could be read:

/frəm drʌʃrI/ or /frəm drʌʃerI/

with the from at vanishing point. So he settles the matter according to his 'certain instinct' and changes the line to:

Renounce that drudgery

In considering the 'rules' of verse language, the poet--for my purposes--plays the part of 'native speaker' in that it is his innate competence that must be expressed in the grammar of verse language. This chapter is concerned with verse movement and the manipulation of the suprasegmental language features to produce the required movement in the phonetic output. These examples of Yeats' explicit discussion of implicit language knowledge are included to illustrate the poet's exercise of his poetic competence in the language he is using.

* the accents, hyphens, etc., are as printed in John Thompson, "Permafrost," New York Review of Books, January 26, 1967.

MOVEMENT AND LANGUAGE PATTERNS IN VERSE

A convenient division of verse according to movement is into two main classes:

- 1) metered verse
- 2) unmetered verse

The distinction I wish to make between these two types of verse is that the movement of metered verse depends upon repetition. Some language element, most usually the stress, is presented in such a way as to set up an expectation of recurrence.⁷ In traditional metered verse, the most obviously recurring elements are beat and rhyme.

The principal element of metered verse is the recurrence of stress. In speech, stress has been observed to recur in a particular pattern. Chapter II discussed syllables as produced on muscular pulses from the lungs and stressed syllables as produced by stronger pulses "every now and then." There is, it seems, a considerable regularity in the recurrence of the stress; in fact, Abercrombie speaks of the stress pulses of English as occurring in "isochronous sequence" and as being "the basis of the structure of English verse."⁸ Although the regularity of the time interval has been attacked in lab experiment,⁹ the theory of isochronism has been welcomed by many linguists, especially those working in versification.¹⁰ One

of the reasons why the linguistic idea of isochronism seems so revelatory may, it seems to me, be because introducing an element of timing makes it possible to think of metered verse in the same way as metered music. When a beat recurs regularly in verse, it can have the same rhythmic effect as in music although it is not properly comparable. Verse is not music. Music operates in time, pitch and timbre--qualities of sound only--whereas verse as well as time, has the intricacies of the language and of meaning to manage. The postulation of isochronism seems to offer a way of explaining how verse can exploit metrical beats without distorting the language. (Contrary to the division into metrical feet whose regularity does distort the language.) The isochronous pulse is already in the language and at the service of verse. Wellek and Warren, in discussing the musical theories of versification, speak of the 'subjective' feeling of isochronism although they have to acknowledge that "Acoustic metrics also shows that there is no strict isochronism, since the actual duration of measures varies considerably."¹¹ The subjective feeling for the existence of an isochronous beat in metered verse seems to be borne out. In fact, I would go further and say that the isochronous recurrence of stress forms part of the native speaker's intuitive language competence. Why does one laugh at the last line of the following limerick? Isn't

it because one has to gabble to get all the syllables between know and can into the time that one feels is allowed?

The was an old man of Japan
 Who could never make limericks scan
 When they said, "But the thing
 Doesn't go with a swing!"
 He said, "Yes, I know but I like to get as
 many words into the last line as
 I possibly can."

Abercrombie makes a point of the stress rhythm being a muscular rhythm "rather than a rhythm of sound" and says, "This is why verse can be immediately recognized and felt as verse in silent reading."¹² Another explanation might be the shared knowledge of the phonological laws of the grammar by which the sound rhythms are generated. The same kind of shared language competence by which one speaker understands another's sentences even though he can never have heard them before. On the basis of recurring stress rhythm, Abercrombie sets up his own rhythmic unit of verse (which he calls a 'foot') measured from stress to stress, including the first stress and all segments up to but not including the second. This 'foot' is the same kind of unit as the phonemic clause¹³ which I prefer to use. Both units (Abercrombie's foot and the phonemic clause) contain only one primary stress and a variable number of syllables¹⁴ but the phonological rules for the derivation of pitch contour and juncture

point (see Chapter II, page 30) operate around the phonemic clause and so make it a preferable unit for me.

The poet's greatest constraint in generating language for metrical verse is to fulfil the pattern of expectation set up by the repetition. Although, "no vers is libre for the man who wants to do a good job," as Ezra Pound quotes T.S. Eliot as saying,¹⁵ unmetered verse is, in fact, freed from the expectation of repetition, although it has its own constraints sometimes developed poem by poem as it goes along.

A poem is generated in terms of its own thematic rhythm; the poet, to quote Ezra Pound again, has a "chune" in his head and he generates his sentences so that they fit, "or when they don't go into it they stick out and worry him."¹⁵ However, freedom from repetition does not mean that unmetered verse need be discussed in different language terms from metered verse. Unmetered verse is still language generated for verse purposes. The poet still has an ear on the phonetic output. He may be inventing his tune, but it is still what he wants you to hear and the movement of the sound patterns of the language is as much part of the rhythm of his poem as if he had been writing with metrical regularity. The phonological rules of the grammar of the language are no different

and the phonemic clause can still function as a unit of analysis in laying bare the formal rhythm of the poem.

However, the contradictory situation between print and sound is still present in the analysis of unmetered verse. Northrop Frye sees a connection between "genre and integrating rhythm,"¹⁶ and distinguishes between genres according to the connection between the poet and his audience. "Words," he says, "may be acted in front of a spectator; they may be spoken in front of a listener; they may be sung or chanted; or they may be written for a reader,"¹⁷ and he goes on to quote Mill's aphorism that a lyric is "preeminently an utterance overheard." But the reality of verse--literary verse--as speech has for a very long time been buried under print. A poet's audience is predominantly readers. Wordsworth may have preferred to declaim his verse directly to an audience, but when he did, there were very few people to hear him.

In mid-twentieth century, the situation is different. Twentieth century verse continues to reach one audience through print (where it can maintain the quality of being overheard), but it also happens that the same verse is transmitted--and sometimes to a very large number of people--from a speaking poet to a listening audience, not only through readings, but

also through records, radio and so on. So it happens that as well as innovations in sound patterns, contemporary verse also shows a development of graphic patterns of verse forms upon the page. The two--the sound and the print--are, in many cases, connected in the mind of the poet. The graphic presentation can be used to reinforce rhythm--as I think it does in poems B and C of E.E. Cummings discussed in Chapter VI. However, the observable common factor in metered verse, unmetered verse, the poem seen and the poem heard, is the line. The constitution of the line and the translation of the visual signal it presents into phonetic realisation will be considered in Chapter V.

PHYSIOLOGICAL RHYTHM

There has also been considerable experimentation in verse rhythms shaped according to the body rhythms of the poet, notably breathing.¹⁸ This development in verse is interesting from a linguistic point of view because it seems to parallel recent theories that regard language as being a biological predisposition rather than an acquired behavioral capacity.¹⁹

As I said above, the movement of unmetered verse is best considered poem by poem, each poem having, as it were, its own versification. However, the connection between physiology and linguistics does give something

in the way of background language theory against which the movement of some contemporary verse can be considered and so will be discussed as part of the present chapter. In the verse recordings on which Chapter VII of this thesis is based, breathing was recorded and in the analysis breath is related both to the verse movement and to the syntax and to the phonemic clause.

I want to compare two discussions of speech rhythms. Although they are separated by 50 years, they have an intriguing connection. What I want to extract from W.M. Patterson's The Rhythm of Prose of 1917 is his observation of the organic nature of rhythm. That he applies his results to a theory of prose rhythm need not, I think, matter. Subjective rhythm, applies equally to prose, verse or speech. Patterson finds that rhythm in time:

depends, primarily, upon the organization of some part of consciousness into a series of elastic subjective units of time (marked by subjective tension-summits or by sensations of actual muscular contraction).²⁰

He sets up subjective unitary time pulses as something that goes on in the body, and gives characteristic individual rates that always underly rhythm perceptions. He describes this subjective time unit as he experiences it in himself:

...sometimes affected by heart-rate, but, as a rule corresponding apparently to an average walking step (a little over .7 sec), and, like any walking step, capable of accelerating and

retarding. These unitary (ungrouped) time-intervals are marked off by a series of what appear to be muscular tensions in the region of the head, sometimes localized in the neighbourhood of the ears (musculus tensor tympani) sometimes in the throat, or elsewhere. These tensions sometimes, but not always, coincide with concomitant heart-beats ...breath-rate does not seem to affect these inner pulses so much as the pulses or their multiples affect the breath rate; that is, the breathing muscles sometimes have a tendency to reserve their action at the moment of initiating inhalation or exhalation, in order to fall in with the phase of a unitary pulse.²¹

The experiments on which the book is based include a sort of test of the capacity of his 12 subjects to perceive rhythm; rhythms were beaten out as drum beats for the subjects to listen to under a variety of circumstances. Their recorded reactions form the body of the book.

Patterson's underlying pulse is interestingly corroborated (though not as to the time period) in a scientific work of 1967, Dr. E.H. Lenneberg's Biological Foundations of Language. In a discussion of the physiology of phonation, he says:

We have proposed that a rhythm exists in speech which serves as an organizing principle and perhaps a timing device for articulation. The basic time unit has a duration of one-sixth of a second. If this rhythm is due to physiological factors rather than cultural ones, it should be then present in all languages of the world ...in the discussion of rhythm we have added some temporal dimensions... the rhythm is seen as the timing mechanism which should make the ordering phenomenon physically possible. The rhythm is the grid, so to speak, into whose slots events may be intercalated.²²

There is another connection between Patterson and Lenneberg. Patterson paraphrases Neumann (1894) as regarding rhythm as:

a mental process by means of which we group sensations of sound into a system of images arranged upon a temporal basis. But besides this type of rhythm he describes a rhythm of the thoughts themselves capable of disturbing strictly temporal relations. Phrases may in this way be considered as units and similar groups recur with satisfactory effect at unequal intervals of time.²³

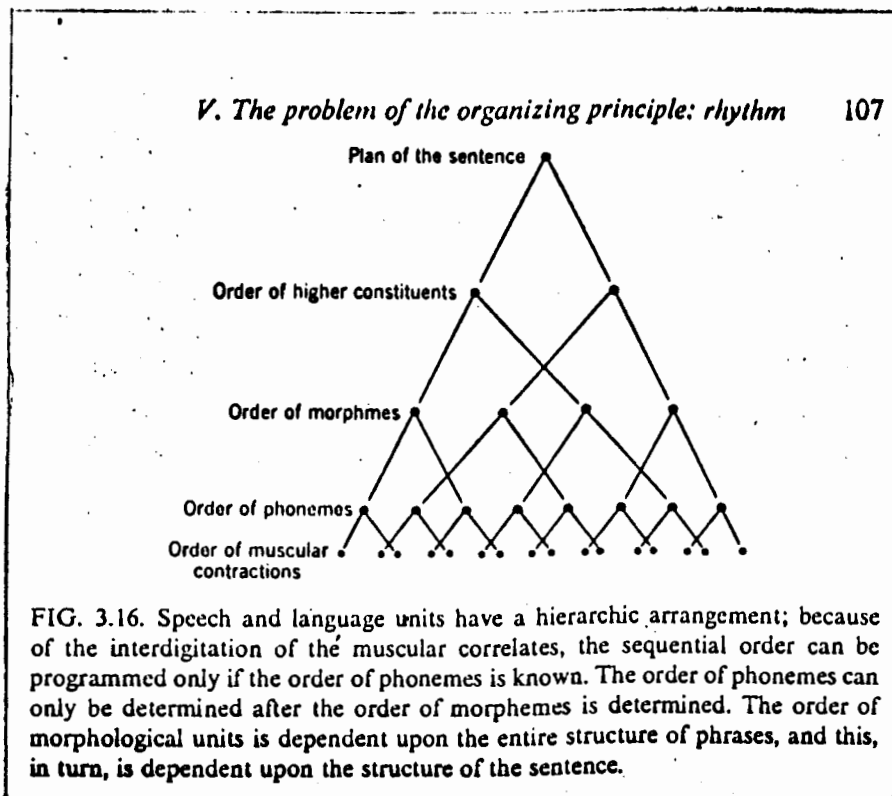
Lenneberg too is concerned with the timing of thought and speech. He goes into the complicated neural and muscular ordering that takes place to produce speech and makes this (to me) surprising statement:

the total time required for the activation of all muscles that enter into the production of a single speech sound may be as much as twice as long as the sound itself.²⁴

In other words, the signal to get the speech sound going must be given an appreciable time before the sound is needed. To do this, not only must there be rhythmic ordering to signal the sound needed, but the speaker has got to know what he is going to say. The thought (and this was Neumann's point) must have already given shape to the phrase. To which Lenneberg comments:

The most interesting implication of this discussion is that formal aspects of purely physiological processes seem to be similar to certain formal aspects of grammatical processes; it appears, in fact, as if the

two, physiology and syntax, were intimately related, one grading into the other, as it were.²⁵



E.H. Lenneberg, Biological Foundations of Language.

I reproduce Lenneberg's diagram of the ordering of the physiology of articulation because it looks remarkably like the tree diagram which generative grammar uses to demonstrate the deep phrase structure of a sentence.

BREATH PATTERNS IN VERSE

For verse rhythm based on breath, the physiological rhythms of breathing have to be thought of in two ways: the rhythms of quiet breathing and breath rhythms during speech. The following diagram²⁴ shows the

78 *Some physiological correlates*

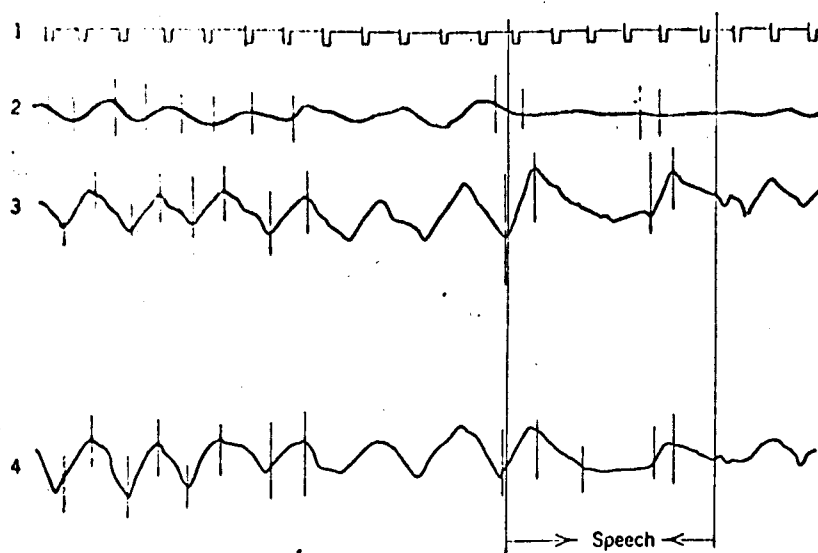


FIG. 3.1. Quiet breathing and breathing during speech in a normal four-year-old girl. (1) Time marker, one second; (2) airflow through nose; (3) chest volume; (4) abdominal expansions. Notice that chest and abdomen move synchronously during quiet breathing but are slightly out of phase during speech. (After Gutzmann reproduced in Ranke and Lullies, 1953.)

E.H. Lenneberg, *Biological Foundations of Language*.

relatively even curve of quiet breathing in contrast with the peaks and slopes produced by speech. One does not, it seems, voluntarily change one's rate of breathing. To decide deliberately to breathe faster can make one giddy or light-headed,²⁷ and singers and windplayers who have to control their

breath must learn how by easy stages. The strange thing is that if the breathing pattern is left to itself to adjust to speech, it does not matter how long you go on talking, the breath mechanism will not get tired; you may lose your voice but your breathing will not bother you. In thinking of verse patterned on breath, one has to differentiate, then, between the breath pattern observed in the course of producing speech and the breath pattern at rest. The first would seem to be ordered by the same neurological teamwork that produces phonation, triggered at the moment of cognition in the same way as the generation of language surface structure. That is, you contemplate a long sentence or a complicated statement, and in doing so the order goes out for an appropriate intake of breath. The thought and the grammar, as we saw above, are always ahead of the arrival of the speech sounds, so that it would seem perfectly feasible for breathing and syntax to go in step. One might say, then, that the rhythm of breathing during speech is in the language, while the rhythm of breathing at rest is in the individual, and that the patterning of verse rhythm on breathing involves the regulating of one type of breathing in terms of the other.

To sum up: the special linguistic role of the poet in the generation of verse was considered in that, contrary to normal language practice, he generates according to the phonetic end product. Verse was divided according to its movement into two main groups; metered and unmetered and the language elements composing both types were considered. The role of organic body rhythms including breathing were considered in the light of their possible contribution to the rhythms of unmetered verse and in connection with the generation of sentences in the surface structure of the language.

CHAPTER IIINOTESTIME, RHYTHM, METER AND MOVEMENT

- 1 Roman Jakobson, N. Chomsky, M. Halle, et al., "The Morphonemics of English," Quarterly Progress Report, No. 58, (July 15, 1960), Massachusetts Institute of Technology, Research Laboratory of Electronics, p. 275.
- 2 C. J. Fillmore, "On the Syntax of Preverbs," Glossa, I:2 (1967, p. 104.
- 3 A. Norman Jeffers ed., W. B. Yeats, Selected Poetry (London, 1962), p. 159.
- 4 Donald Davie, Articulate Energy (NY., 1958), p. 95. quoting a letter from W. B. Yeats to H.J.C. Grierson, 1912.
- 5 A. Wade, ed., Selected Letters of W. B. Yeats (London, 1954), p. 845. Letter of February 8, 1937.
- 6 John Thompson, "Permafrost," New York Review of Books, January 26, 1967.

In quoting from this article (p. 53.), I find the accents and hyphens not particularly comprehensible or even credible. However, I have not been able, to date, to find any more authoritative source than the New York Review of Books article and I do not think the matter is very vital. In these circumstances I have reproduced the accents etc. exactly as they appear in this source. However much information they do or do not give, the point is still there: that the letter shows up the doubts behind the first draft and the alteration in structure removed the doubts.

- 7 One might, on this basis, say that all verse is metered because it only exists as verse because of the division into recurring lines. This brings in the visual element referred to later in this chapter and also in chapter V. For the present I am speaking only of recurring elements in the phonetic output of the language.

Northrop Frye, Anatomy of Criticism (Princeton, 1957) (Atheneum ed., NY., 1967), p. 251:

... meter is an aspect of recurrence, and the two words for recurrence, rhythm and pattern, show that recurrence is a structural principle of all art, whether temporal or spatial in its primary impact. Besides meter itself, quantity and accent (or stress)

are elements in poetic recurrence, though quantity is not an element of regular recurrence in modern English, except in experiments in which the poet has to make up his own rules as he goes along. . ."

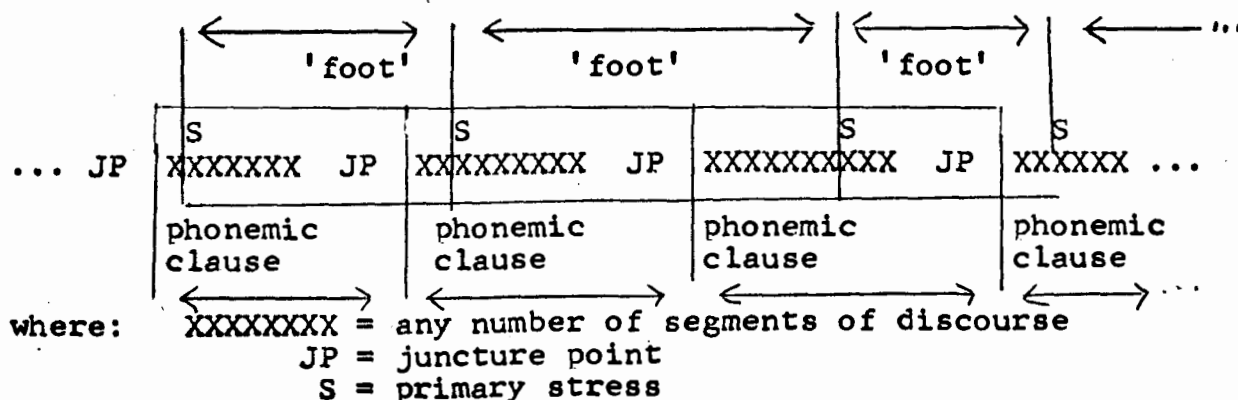
- 8 David Abercrombie, Studies in Phonetics and Linguistics, (Oxford UP., 1965), p. 18.
- 9 Yao Shen and Giles Peterson, Isochronism, Studies in Linguistics, #9, (Buffalo, 1962).
- 10 Michael A. K. Halliday, "The Tones of English," Archivum Linguisticum, 15.4, Fasc. 1, (1963).

- Halliday uses Abercrombie's isochronous foot measure as the unit of "rhythm in English."

Harold Whitehall and A.A. Hill, "A Report on the Language-Literature Seminar," H. B. Allen ed., Readings in Applied English Linguistics, (NY., 1964), p. 488.

- this report says, "the third characteristic of English which is strikingly used in meter is . . . the fact that the amount of time between two primary stresses tends to be the same, irrespective of the amount of material between them. This feature is called isochronism."

- 11 Rene Wellek and Austin Warren, Theory of Literature, (NY., 1956, 3rd ed., Harvest paperback), p. 169.
- 12 Abercrombie (note 8, above), p. 20.
- 13 The connection between the Abercrombie foot and the phonemic clause is best shown in diagram:



- 14 Abercrombie (note 8, above), p. 17-18.
- 15 Ezra Pound, "T.S. Eliot," Literary Essays (New Directions, 1954), pp. 421-422. Reprinted from Poetry, 1917.
- 16 Northrop Frye (note 7, above), p. 246
- 17 - p. 247
- 18 Charles Olson, "Projective Verse," The New American Poetry: 1945-1960 (Grove Press, 1960), p. 386 ff.
- 19 Eric H. Lenneberg, "The Capacity of Language Acquisition," J. A. Fodor and J. J. Katz ed., The Structure of Language (NJ., 1964), p. 579 ff.
- 20 William Patterson, The Rhythm of Prose (NY., 1917), p. 89.
- 21 - - p. 65.
- 22 Eric H. Lenneberg, Biological Foundations of Language, (NY., 1967), p. 118.
- 23 Patterson (note 20, above), p. 17, quoting E. Meumann, Untersuchungen z. Psych. u. Aesth. d. Rhythmus, Phil. Stud. X 1894, p. 272 ff.
- 24 Lenneberg, Biological Foundations (note 22, above), p. 105.
- 25 - - p. 107.
- 26 - - p. 78.
- 27 - - p. 80.

CHAPTER IV

THE SYLLABLE AND SYLLABLE LENGTHI THE SYLLABLE AS A UNIT OF SPEECH

So far, this thesis has only considered verse structure from the point of view of the suprasegmental or configurational features of language. That is to say, all that has been discussed is the division of discourse into phonemic clauses according to the pitch-stress-juncture pattern and the movement of verse according to the terms of stress timing. The purpose of the present section of this chapter is to consider the language segments themselves.

The syllable--the traditional unit of classical verse theory--has become by virtue of the mechanical recordings of acoustic phonetics a practical measurable unit of speech sound. Spectograms show syllables clearly and separately. Spaces of minimal sonority are followed, in fold-like patterns, by the dark

recording produced by the sonorous nucleus (see spectrogram, page 35, Chapter II). These graphs display the pitch frequencies of the sound, the harmonic components and the amplitudes and, against the horizontal time axis, the duration of the syllabic sounds.¹

A syllable may be regarded as made up of phonemes whose sound properties function acoustically in two broad divisions: they are either part of the sonority of the syllable or they make the division between the syllables.

In English, a syllable can consist of a single phoneme, can begin or end with a vowel, and can be separated from other syllables by one or more consonants or by a glide. The peak of sonority, the nucleus, in English is usually a vowel or a diphthong, sometimes a continuant consonant, but never a glide. Jakobson, Halle and Fant in Preliminaries to Speech Analysis set up the prosodic feature of syllabicity to describe the functioning of a phoneme as nucleus of sonority in a particular context. [\pm syllabic] is not, of course, an inherent feature, but one that is determined by the context. For example, the /n/, with the inherent features

+consonantal
+continuant
+nasal

can be [$+$ syllabic] in button and [$-$ syllabic] in any.²

It is essential to be precise about the distinction drawn by Jakobson, Halle and Fant between the two acoustic notions of inherent and prosodic.

They say:

The distinctive features are divided into two classes: 1. inherent, and 2. prosodic. The latter are superposed upon the former and are lumped together with them into phonemes. The opposition grave vs acute, compact vs diffuse, or voiced vs unvoiced, and any other features appears within a definite sequence of phonemes but is, nevertheless, definable without any reference to the sequence. No comparison of two points in a time series is involved. Prosodic features, on the other hand, can be defined only with reference to a time series.³

It should be noted, however, that the prosodic feature [+ syllabic] is not phonemic in English. The presence or absence of a syllable does not change meaning. For example, the syllable dropped from over to make o'er does not change the meaning of the word. In other languages (for instance Czech), this is not the case and syllabicity functions phonemically.³

One can say then, that vowels and liquids can function as syllable nuclei and carry the prosodic feature [+ syllabic]. One can also say that by virtue of the stress-timed rhythm of English,⁴ syllables are realised in speech in variable lengths of duration. This is clearly shown on the spectrogram on page 35 of this thesis. Time is registered on the horizontal axis and one can clearly see in the recording of the

words (i) incite and (ii) insight that the first syllable in both words takes a different time to say.

In (i) incite; in registers 22 centiseconds against cite, 51 cs.

In (ii) insight; in registers 28 centiseconds against sight, 54 cs.

At the same time, "length" can be thought of as a contrasting quality in vowels. Daniel Jones, for instance, discusses vowel length as follows:

The vowels Nos. 1,5,7,9,11 (i:, a:, u:, >:) are longer than the other English vowels in similar situations, i. e. when surrounded by the same sounds and pronounced with the same degree of stress. Thus the vowels in heed /hi:d/, hard /hɑ:d/, hoard /hɔ:d/ food /fu:d/, heard /hɜ:d/ are longer than the vowels in hid /hid/, head /hed/, pad /pæd/, rod /rɔd/, bud /bʌd/, hood /hud/.²

Jakobson, Halle and Fant, as already discussed, class syllabicity as prosodic (as they also do stress and pitch modulation). To these prosodic features, they add length which they describe as follows:

The prosodic opposition long vs short (distinguishing either simple from sustained, or simple from reduced phonemes) is based on the relative, not absolute, length of the phonemes in the given sequence. Their absolute duration is a function of the speech tempo.³

In the supplement added to the 1965 edition of Preliminaries, they discuss the inherent feature tense/lax which they connect with the prosodic feature long/short⁴ and come to the conclusion that the

tense/lax opposition should "be detached from the sonority features and viewed not as inherent but as a separate 'protensity' feature, which among the inherent features corresponds to the quantity features in the prosodic field."⁶

The discussions of 'length' in Preliminaries,⁶ in Daniel Jones' Outline² and in Abercrombie's Studies in Phonetics and Linguistics⁴ are all concerned with relating what is physically observable to a linguistic theory. Daniel Jones is concerned with variable vowel lengths, Abercrombie is making the point that the variable length of syllables depends not upon the phonematic make-up⁷ but upon the position of the syllable in relation to the stress-point, Jakobson, Halle and Fant are classifying the observed acoustic features but in two distinct ways: features which are an inherent part of the sound and prosodic features that "can be defined only with reference to a time series." The protensity feature of [+ tense] offers a potential link in that phonemes with the feature [+ tense] can be prolonged in time so as to produce the prosodic feature [+ long]. If, therefore, the Daniel Jones' 'long' vowels listed above are regarded as [+ tense] and the 'short' vowels are regarded as [- tense], much of the confusion between the length of the syllable and the length of the vowel is **dispelled**.

When this vexed question of length comes to be applied to theories of verse structure confusion is worse confounded by a classical tradition of metrics which applies a mistaken notion of the function of syllable 'length' or 'weight' in Latin, in a mistaken fashion to English.

Latin, it seems, was regarded as a syllable timed language, and rules for the composition of Latin verse were based on 'weight' or 'quantity' of syllables. English schoolboys learned Latin and wrote Latin verses even up to the time of a generation still living in 1967.⁸⁾ The prestige of the classics and a classical education built an enduring mystique which seemed to say, "however English verse may be composed it must be explained in terms of the rules of Latin quantity." That Latin theory could not be made to work with the English language was realised in Elizabethan times, so that one finds Thomas Nashe (1589) saying that "your Latin hexamiter" however fine a gentleman, will not work for English because

Our speech is too craggy for him to set his plough in; he goes twitching and hopping in our language like a man running upon quagmires; up the hill in one syllable, and down the dale in another.⁹⁾

And yet the subservience to Latin 'quantity' has persisted into the twentieth century. I do not mean Bridges' conscious intent to write syllabically, but rather the loose thinking of the 'prosodists' that

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William Thomson is out to destroy in his Rhythm of Speech published in 1923.¹⁰ He attacks the "fictions" (his word) of prosody and when he finds someone saying "in many words quantity is hardly distinguishable from accent,"¹¹ his scornful comment is that they might just as well have said that "two hours is hardly distinguishable from one o'clock." And yet--in spite of the fact that his whole enormous book is aimed at worsting the classical prosodists--he still finds himself obliged to account for the length of syllables, and does so in terms of musical time values.

The irony of the whole situation is that, according to present-day linguistics, the notions of syllable quantity in Latin verse are not in fact based on the facts of the Latin language as it is thought to have been spoken. W.S. Allen, in his paper "On Quantity and Quantitative Verse," says:

In the Latin language the concept of quantity has only one function--to determine which syllable of a word may be stressed. So far as the language is concerned, therefore, the rules of quantity are rules of stressability.¹²

One might say, I suppose, that neither the classical teachers nor the classical scholars were thinking of spoken Latin. They were thinking of what Robert Graves calls the "parlour game of Latin Verse Composition," and it was the rules for this artificial activity that got passed over, with such disastrous results, into the teaching of English prosody.

One cannot, I think, go into an analysis of verse structure in language terms (which is the purpose of this thesis) without some sort of an attack on the myths of metrical quantity, and this has been the intention of the foregoing pages. To sum up: this chapter concludes that syllable length exists as an acoustic fact, that it functions in English as a prosodic feature in a time series (prosodic in the sense of the word as used in Preliminaries to Speech Analysis), and is not to be confused with vowel length. Whatever function the syllable may be found to have in English verse, one must beware of ideas and terminology about 'quantity' and 'length' loosely used in a way that is not borne out by the linguistic facts, and--lastly--that there has been much pedagogical confusion in teaching rules of Latin versification, and that this has run over into metrical theory about verse in English.

II ROLE OF THE SYLLABLE IN THE PRESENT THESIS

In this thesis, the syllable as a unit functions in two ways:

- 1) as a sub-division of the phonemic clause
- 2) as a basis for investigating the sound texture of verse.

The next chapter will set up the syllable (S)

as the unit from which first the phonemic clause and then the verse line may be generated. For this purpose, syllable needs no more definition than that it contains a phoneme with the prosodic feature [+ syllabic].

There are various reasons which make the syllable an appropriate unit from which to work in the investigation of sound texture. In the present approach, the syllable is considered as basic to the verse line, and although all the phonemes contribute to the sound texture, to work from the syllable is, I think, likely to show the sound patterning in its relationship both to the line of the verse and the structure of the language of the poem.

I propose, therefore, to regard the syllable --as well as being the basic generative unit--as a unit that can be divided for investigation of sound, into the inherent acoustic features of Jakobson, Halle and Fant's Preliminaries to Speech Analysis.

The concept of distinctive features is, to quote Preliminaries to Speech Analysis, the "resolving of speech into ultimate units,"¹⁵ but these 'ultimate units' are grouped into larger categories which have their own significance and which provide a sort of hierarchy of application. In brief summary, these groupings are:

- 1) Fundamental source features which divide

speech components into vowels, consonants, glides and liquids.

- 2) Secondary source features which establish whether consonants are interrupted vs. continuant, strident vs mellow, and the quality of voice vs. voiceless that applies all through.
- 3) Resonance and tonality features which apply significantly in the following order:¹⁴

compact vs diffuse

grave vs acute

flat vs plain

Leaving the consonantal feature + nasal to be applied last and the feature - tense vs lax which has to be thought of and applied separately.

This particular acoustic breakdown is, of course, the product of the precisions of acoustic machines, and the resulting distinctions can seem unduly complicated and a long way from ordinary perception. However, the whole concept of distinctive features is, it seems to me, better thought of not in terms of perception but in terms of innate language competence. That these fine distinctions function in this way is illustrated in those languages that require, say, the adjustments necessary for vowel harmony as part of the phonological component of the grammar. Preliminaries to Speech

Analysis¹⁵ quotes languages in which the vowels of a word may be all compact or all diffuse, but not mixed, and other languages in which grave and acute are not allowable in the same word. In these languages, applying the distinctive feature appropriately must be a matter of native intuition, so that I think it not unreasonable to conjecture that, even in English where feature distinctions are not required by the grammar, a poet's enhanced language competence might make him intuitively aware of finer connections and distinctions than concern ordinary speech.

I propose, therefore, to make an analysis in terms of distinctive features of some of the sound texture in an example of English verse. The verse chosen (for no particular reason) is Robert Frost's Stopping by Woods.¹⁶

In the complete poem, the vowels of the final (rhyming) syllables are:

/o/ - three times

/e/ - four times

/i/ - nine times.

A comparison between the pertinent acoustic features of these three vowels would be:

	/o/	/e/	/i/
compact	+	+	-
grave	+	-	-
flat	+	-	-
tense	+	+	+

from which it can be seen that the maximum contrast is between /o/ and /i/ which share no resonant features though both are tense. /o/ is the dominant rhyme vowel of the first stanza and /i/ is the only rhyme vowel of the last.

There is an interesting factor in the contrast of compact vs diffuse (or + compact) (or + diffuse) of which I think poetic competence may be aware. Here the contrast in speech sound is comparable to the contrast in timbre of musical instruments. Halle¹⁷ makes the comparison between the articulatory mechanism required to produce a compact versus a diffuse sound as being the difference between the sound produced by a wide-mouthed horn and the sound produced by a narrow-necked Helmholtz resonator, or, say, between the timbre of a trombone and an oboe. Preliminaries to Speech Analysis sets out the difference in scientific terms (see note 18), and goes on to say that laboratory experiments have shown that:

SOUND TEXTURE ANALYSIS

whose	woods	these	are	I	think	I	know
/u/	/U/	/i/	/a/	/ai/	/I/	/ai/	/o/
+compact +grave +flat +tense	+compact +grave +flat +tense	-compact -grave - flat + tense	+ compact - flat + tense	+ comp - flat + tense	- comp - grave - flat - tense	+ compact - flat + tense	+ compact + grave + flat + tense
his	house	is	in	the	vil	lage	though
/I/	/au/	/I/	/I/	/ɔ/	/I/	/I/	/o/
+compact +grave +flat +tense	+ comp. + grave + flat +tense	- compact - grave -flat - tense	- compact - grave - flat - tense		- comp - grave - flat - tense	- compact - grave - flat - tense	+ compact + grave + flat + tense
he	will	not	see	me	stop	ping	here
/I/	/I/	/ɔ/	/i/	/i/	/ɔ/	/I/	/i/
+compact +grave +flat +tense	-compact -grave -flat -tense	+ compact + grave - flat + tense	- compact - grave - flat + tense	- comp. - grave - flat + tense	+ comp + grave - flat + tense	- compact - grave - flat - tense	- comp. - grave - flat + tense
to	watch	his	woods	fill	up	with	snow
/U/	/ɔ/	/I/	/U/	/I/	/ʌ/	/I/	/o/
+compact +grave +flat +tense	+compact + grave - flat + tense	- compact - grave - flat - tense	+ compact + grave + flat - tense	- comp. - grave - flat - tense	- comp. + grave - flat - tense	- compact - grave - flat - tense	+ compact + grave + flat + tense
Robert Frost:	"Stopping by Woods"						
whose	woods	these	are	I	think	I	know
his	house	is	in	the	village	though	
he	will	not	see	me	stoppigg	here	
to	watch	his	woods	fill	up	with	snow.

On the perceptual level a distinct association links the consonantal and vocalic opposition of compactness and diffuseness ... the ... schematic stop was judged by a large majority of the subjects to be [p] when paired with [i] and [u], but to be [k] when paired with [a].¹⁹

That is to say, when there was no context to guide, in an artificial situation, listeners 'matched' a diffuse vowel with a diffuse consonant and a compact vowel with a compact consonant.

This observation has a bearing, I think, on the rhyme words of Stopping by Woods. Throughout the poem, the /i/ rhyme is followed by a continuant /r/ which in Frost's New England dialect is not much more than a retroflex colouring to the vowel. In the final stanza--which is conclusive in meaning as well as being the last--the /i/ is ended by the voiceless stop that is related to the vowel in this feature; the diffuse /p/, producing a finality in sound that resembles the resolution of a dominant seventh chord into the tonic in the full close of a classic amen.

An analysis of the syllable nuclei of the first stanza of this poem is set out in the diagram facing this page. In this diagram, it is interesting to notice the occurrence of the [+ tense] feature. On the basis that tense vowels with their greater air pressure, etc., can be made to continue for a longer duration than lax vowels, one might say for this stanza that any of the tense vowels could be

made 'long'.

Whose woods these are I think I know
 His house is in the village though
 He will not see me stopping here
 to watch his woods fill up with snow

Although the syllable count is precise all through the poem, the only pattern of syllable length that seems to emerge is that all the rhyme words have tense vowels; that the second and the last line have a high proportion of lax vowels which might perhaps give the opportunity to speak them quickly and then prolong the final though and snow.

Harold Whitehall²⁰ quotes a first draft of line 1, stanza 2 which was subsequently changed.

The steaming horses think it queer
 became

My little horse must think it queer.

The significance of this change is, I think, in the eliminating of /i/ from an unimportant mid-line position. /i/ has a special function in the last stanza and if this sound comes too often in the body of the poem, it will lose its impact at the end. It only turns on a single feature, but, in fact, /I/, the vowel of little shares all the features of /i/ (the vowel of steaming) except that of tenseness, and if we take the distinctive features in Halle's order of

- 1) compactness
- 2) gravity
- 3) flatness
- 4) tenseness

all that the change has done is to preclude the possibility of the syllabic vowel being prolonged.

N O T E S

CHAPTER IV: THE SYLLABLE AND SYLLABLE LENGTH.

- 1 Seymour Chatman, A Theory of Meter, (The Hague, 1965), pp. 92-94
- 2 Daniel Jones, Outline of English Phonetics (Cambridge, Eng., 1964 ed.), p. 233
- 3 Roman Jakobson, C.G.M. Fant, M. Halle, Preliminaries to Speech Analysis: The Distinctive Features and their Correlates (Cambridge, Mass., 1951)(edition, Aug., 1963) (6th printing, 1965), p. 13.
- 4 David Abercrombie, Studies in Phonetics and Linguistics (Oxford UP., 1965), p. 26.
- 5 Jakonson et al., Preliminaries (note 3, above), p. 14
- 6 - - - pp. 59 & 60
- 7 Abercrombie (note 4, above), p. 28.
- 8 Robert Graves, The Crowning Privilege (London, 1955), p.32.

My father gave me a strictly classical education, which meant that for several years I composed Latin verses once a week throughout term-time. Latin being a dead language, I could dissociate this classroom activity from the private writing of poems in my cubicle by the light of a pocket torch. I came of a large Victorian family and, at home, excelled in parlour games. This game of Latin Verse Composition challenged my wits. I had to be meticulous about quantity - I well remember the bit Male I won, when I first started, for carelessly ending a hexameter composition on the diving-bell with the words Bona Machina. And I had to make Virgil or Ovid my exemplars in metrical correctness."
- 9 Thomas Nashe, Anatomie of Absurditie (1589), quoted in Robert Graves, The Crowning Privilege (note 8, above), p. 80.
- 10 William Thomson, The Rhythm of Speech (Glasgow UP., 1923).
- 11 - - - p. 87.
- 12 W. S. Allen, "On Quantity and Quantitative Verse," In Honour of Daniel Jones, D. Abercrombie ed. (London, 1964), p. 5

- 13 Jakobson, et al., (note 3, above), p.1, #1.1.
- 14 - - p 43.
- 15 - - p. 41.
- 16 Robert Frost, "Stopping by Woods on a Snowy Evening,"
Ira Dilworth ed., Twentieth Century Verse (Toronto,
1945), p. 173.
- Whose woods these are I think I know.
His house is in the village though;
He will not see me stopping here
To watch his woods fill up with snow.
- My little horse must think it queer
To stop without a farmhouse near
Between the woods and frozen lake
The darkest evening of the year.
- He gives his harness bells a shake
To ask if there is some mistake.
The only other sound's the sweep
Of easy wind and downy flake.
- The woods are lovely, dark and deep,
But I have promises to keep,
And miles to go before I sleep,
And miles to go before I sleep.
17. Morris Halle, "In defense of the Number Two,"
E. Pulgram ed., Studies Presented to Joshua Whatmough
(The Hague, 1957).
- 18 Jakobson, et al., (note 3, above), Section 2.41, p. 27.
- ... in the case of vowels the compactness
increases with an increase in the cross-sectional
area of any constricted passage. Thus open
vowels are the most compact, while close vowels
are the most diffuse.
- 19 Jakobson, et al., (note 3, above), Section 2.413, P. 28.
- 20 Harold Whitehall, "From Linguistics to Poetry,"
Lecture and notes handed out at Simon Fraser University
(1965).

CHAPTER V

THE VERSE LINEI THE LINE AS A UNIT OF VERSE

Although there is, I think, no difficulty in accepting the line as a basic unit in the structure of verse, it is hard to establish its linguistic identity. One has to postulate a connection between what is to be seen and what is to be heard; between the two possible realizations of the abstraction of the poem--the graphic substance and the phonic substance.

About the verse line as it exists in both substances, one can say two things. First, that it is a special division of language not found in speech or in prose, and second, that it is constituted as it is in order to present language grouped in a phonologically special way. But the connection still has to be made between what this phonologically special grouping

may be and the verse line as a graphic division.

In feeling for ways to do this, it would seem that for English verse--for English verse is essentially literate verse preserved in graphic substance--one is obliged to take the graphic line as given and explain the relationship of the sound pattern to it. Yet this way--although it may be the way in which the connection is finally stated--may not be the best way to begin. Historically, verse has existed in sound before ever it came to be written down. In composition, the poem exists first as an abstraction before it is realised into its two substances, and linguistic expression of the generation of a verse line would connect the abstraction to the phonic substance. These would seem to be arguments in favour of starting with an investigation of the phonic substance of the verse line and working towards the graphic. And this is what has in fact been done in the course of linguistic work on the oral poetry still found in some parts of eastern Europe. Although the language has no connection with English, it is worth considering what happens when this verse, found only in phonic substance, comes to be written down.

The structure of oral verse can only exist in the ear of a singer or reciter who cannot, as he delivers his verse in sound, have any notion of visual

divisions. Yet structural divisions exist in the phonic substance. A large part of the work of A.B. Lord was a linguistic analysis of the structure of oral verse, and out of this analysis came a unit which consisted, in the Yugoslav tradition, of ten syllables with a break after the fourth.¹ Roman Jakobson analysed a Serbian folk epic from a phonograph recording and found that it consisted of units of "precisely ten syllables followed by a syntactic pause."² T.A. Sebeok reports on a Cheremis song-poem which when transcribed phonetically was found to fall into 'lines' of regular length end stopped by juncture.³ On the basis of these junctures, Sebeok divided the poem into lines and the correctness of the division is strongly supported by the syntactic and morphological patterning within the line divisions.

What exactly has been done? Line-ends have been equated with phonological junctures. One cannot formulate a law for English on the basis of an example or two from a language with an entirely different phonology (though it may be that 'syntactic pauses' and even some generalized form of juncture could turn out to be among the language universals), but the transition from phonic to graphic might, all the same, be tried out in this way--tentatively--for English. Twisting the situation back again, then, to suit the primacy of the graphic line in literate verse, a hypothesis worth testing would seem to be:

In English verse the end of a graphic line signals the presence of juncture.

This hypothesis says, in effect, that the line-end that can be seen can be heard as juncture. This is a useful form of expression in that juncture was also the boundary of the phonic division of speech--the phonemic clause--and by expressing the end of a verse line in terms of juncture, juncture can function as a factor common to both divisions; the phonemic clause and the verse line.

But so far, the hypothesis for the line-end says nothing about what kind of juncture, whereas the boundary of a phonemic clause was stipulated as being some kind of terminal juncture. Although there is no reason to suppose that a line-end juncture is not the same kind of language feature as the juncture observed in speech (verse language being, according to my thesis, the main language used in a special way), it would be a mistake to assume that a line-end juncture must be a terminal juncture. One would at once come up against examples of 'run-on' lines unquestionably without terminal junctures and perhaps without any audible junctures at all. The hypothesis, therefore, is better re-stated as follows:

In English verse, the end of a graphic line signals the presence of a juncture which applies independently of a phonemic clause terminal.

In other words, the statement is that the line-end signals line-end juncture which, while it might be a terminal juncture in some cases, in others it might be no more than the internal /+/
 juncture, which can be contained within a phonemic clause but cannot serve as a boundary.

From this, it can be seen that where the line-end juncture is a terminal juncture, the line will be co-terminal with a phonemic clause, but that where the line-end juncture is /+/, then there must be a phonemic clause that straddles two lines. Terminal junctures have a special connection with stress in that a phonemic clause contains "one and only one" primary stress, but the /+/
 juncture also has a connection with secondary stress, in that "there are only as many instances of it in an utterance as there are instances of /+/
 ; but there may be more pluses than secondaries for plus occurs with tertiaries and weaks..."⁴ That is to say, where rhythm or meter requires a secondary stress, it must be justified by the presence of a /+/
 and this is what a line-end, particularly in unmetered verse, is very often seen to provide. I am inclined to think that a line-end /+/
 falling together with a phrasal /+/
 would produce some sort of terminal. Although I have not the material to establish or prove this notion, the following example from the E.E. Cummings lyric, sweet spring is your, seems to suggest that this

is what is happening. The second stanza reads as follows:

(all the merry little birds are	1
flying in the floating in the	2
very spirits singing in	3
are winging in the blossoming	4

This is poem "B" examined in Chapter VI for which the voice graph (page 134) shows .2 seconds of quiet-- enough to suggest the presence of a terminal juncture. Without the verse line, there could be no more than the /+ / necessary to maintain the secondary stress on are.

Charles Olson, in his essay on "Projective Verse" which I have already had occasion to quote, says of what he calls the contemporary poet, "if he suspends a word or syllable at the end of the line (this was most Cummings' addition) he means that time to pass that it takes the eye--that hair of time suspended--to pick up the next line."⁵ And that might well be the definition of the lightest line-end juncture.

Before going on to a statement of rules for the generation of the verse line, something must be said about the connection with breath. To quote Charles Olson yet again, and this time it is as part of a statement of poetic, he says, "Projective verse teaches ...that that verse will only do in which a poet manages to register both the acquisitions of his

ear and the pressure of his breath."⁶ And again:

And the line comes (I swear it) from the breath, from the breathing of the man who writes, at the moment that he writes, and thus is, it is here that, the daily work, the WORK, gets in, for only he, the man who writes, can declare, at every moment, the line its metric and its ending--where its breathing, shall come to, termination.

It will be recalled that Chapter III differentiated between patterns of breathing at rest and during speech, and suggested that the former might be considered as characteristic of the individual and the latter as representative of his use of the language. The difference between the two patterns is that for speech, breathing is organized in terms of work; that is, that to produce speech, respiration has work to do.*

Here one should, I think, also bear in mind the connection between cognition and phonation, and the similarity between the neural mechanisms that produce speech and the pattern of the deep structure that underlies the surface structure of a sentence. In the generation of sentences, it looks as if the moment of cognition triggers both the sentence structure and the physical connections needed to produce phonation which include the special breathing needed for speech.

* I find it interesting that both the physiologist Lenneberg and the poet Olson both use the word work --the unit of traditional mechanics--to describe the action of breathing to produce speech.

That is to say, in unprepared speaking (speaking off the top of one's head), the sequences of reactions that produce the sound and the surface structure seem to go together.

One might say that projective poets organize their lines in relation to the stretch of speech a breath can carry--their own breath. That the cognitive process and the processes of phonation and respiration are brought together to produce a verse line. However, although not all contemporary poets make this use of breath timing a part of their poetic, all have to breathe and to use breath to read their lines. One might debate what the effect of breath rhythms are on those poets who do not follow a deliberate breath pattern.

In Chapter VII, chest movements in respiration are recorded concurrently with the reading of poems by their authors. The result is a tape recording of the reading accompanied by a graph with an oscillation trace representing the sound of the voice and a curve showing breath intake and exhalation; and both correlated with the line structure of the poem. Analysis of these three factors seems to suggest that the connection between breathing and the movement of the poem--lines and stanzas--might be shown on further investigation

to reveal something of individual style.

II GENERATION OF THE VERSE LINE

In the introductory chapter to this thesis, I said (in the context of verse language considered as an extension of the main language) that while the main language is concerned with the generation of sentences, verse language is concerned with the generation of lines.

The grammar of the main language generates a surface structure to which the rules of the phonological component are applied to produce the phonetic output. This includes the intonational features of which one is the feature of juncture--which has been set up as the limiting feature of a line of verse. This identification of a verse line is, however, quite unconnected with the sentence and turns, phonetically, upon the recognition that the end of a line signalled visually, is realised as some kind of a juncture. This can be expressed:

line ---> X + line-end juncture

where X represents a section of discourse organized (by itself or in connection with sections that come before or after it) according to the syntactic rules of the language. The problem is to fit the line-end rule into the rules of the phonological component by

which the phonetic output of X is realised. The work that will enable this to be done is the set of rules set up by R.B. Stockwell (already referred to) that combine the expansion of IP (intonation pattern) with the Chomsky rules of 1957.

That there is some justification for this kind of formal approach to the verse line comes from Roman Jakobson who in the early days (1925), as one of the school of Russian formalists, refused the 'imaginary' foot as the basic unit of verse rhythm in favour of the line as a 'rhythmico-syntactical' or 'intonational' segment. Again in 1960, Jakobson says:

no linguistic property of the verse design should be disregarded. Thus, for example, it would be an unfortunate mistake to deny the constitutive value of intonation in English meters. Not even speaking about its fundamental role in the meters of such a master of English free verse as Whitman, it is impossible to ignore the metrical significance of pausal intonation (final juncture) whether 'cadence' or 'anticadence' in poems like "The Rape of the Lock" with its intentional avoidance of enjambements. The intonational contour inherent to a poem, to a poet, to a poetic school is one of the most notable topics brought to discussion by the Russian formalists.⁷

When the Stockwell rules were written (1960), T-grammar rules did not generate intonation patterns. It would seem that the 'forthcoming' Sound Pattern of English will connect all the configurational features into the phonetic interpretation of the surface structure and that juncture will be handled as a set of features

in the same type of column-row matrix as is proposed for phonemic segments. Meanwhile, Stockwell's rules provide a workable link by which the line unit may be worked into the generation of sentences.

Stockwell's first rule separates the segments from the intonation pattern.* He then considers the expansion of the intonation pattern (IP) which he expresses as:

$$IP \text{ ---} \rightarrow C + JP$$

About this expansion, Stockwell says:

It is necessary to divide IP into Contour and Juncture Point because whereas the C can be relocated by a variety of transformations, the end point of the C remains unchanged by such relocations. This end point is marked by JP, which is an entity set up to locate the end of a morpheme C which is spread throughout the string.⁸

For the purpose of what this part of the thesis has set out to do, one can also say that a phonemic clause is made up of a chosen number of syllables and an intonation pattern, or:

$$\text{phonemic clause} \longrightarrow \text{syllable}_1 + \text{syllable}_2 \dots \text{syll}_n + \text{IP}$$

or (for brevity):

$$P \longrightarrow \underset{1}{S} + \underset{2}{S} \dots \underset{n}{S} + \text{IP}$$

That is to say, a P must (in order to exist) consist of one syllable and an intonation pattern, and may consist of as many optional additional syllables as one likes to choose. The intonation pattern can then

*Stockwell says this is Hockett's first IC cut, and Trager-Smith in Section 1.73 on page 50 of the Outline separate the conceptual phonemic clause and phonemic word by a process of removing the suprasegmentals.

be expanded according to Stockwell's rule quoted above:

Rule A

IP \longrightarrow C + JP

Stockwell's next step is to divide according to "the two basic functions of intonation contours"--Discontinuity and Continuity, about which he says:

the grammar offers a choice at this point between a pattern which disjoins a segmental sequence of elements from any following sequence or it joins it to such a sequence.⁸

Rule B

C \dashrightarrow $\left\{ \begin{array}{l} \text{Cont} \\ \text{Disc} \end{array} \right\}$

If the Disc choice is made, the next rule applies:

Rule C

Disc \dashrightarrow 001 \downarrow

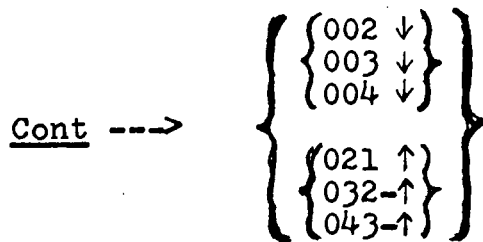
Stockwell explains the symbols he uses here by saying that "001 \downarrow is a specification of all possible English intonation morphemes which end in pitch /1/ and terminal fade."⁸ The digits represent the theoretical levels of relative stress and should be thought of as distributed over all the segments as, for example, in

2 4 1 0 0 1
I've finished \downarrow or I've finished \downarrow

where 0 represents any pitch level at all. 0 signifies that in the position where it appears, the actual pitch level is immaterial.

If the Cont choice is made, there is a variety of possibilities:

Rule D



And that, for present purposes is as far as one needs to go in the Stockwell intonation rules. It should be noted, however, that it was intended that these rules should offer "a well-motivated definition" for "that 'normal' intonation ... which provides a zero-line for opposition with various contrastive patterns."⁹ Question contours and emphatic contours are produced by optional transforms. The two Trager-Smith terminals, terminal rise and terminal fade are incorporated into this grammar and terminal sustain is "treated as an allophone of fading juncture, environmentally predictable."⁸ Stress is assigned by morphonemic rule.¹⁰

Stockwell says about the operation of his rules:

the inclusion of IP among the constituent structure rules has interesting consequences for transformations. This is especially true among the two-string transformations, where more and more intonationally marked phrase breaks are introduced as the sentence becomes more and more complex in its derivation from more and more source strings, each with its own IP.¹¹

The 'intonationally marked phrase breaks' that he speaks of here crop up all the time in verse. In addition to the regular transformations of speech syntax, there are the added transforms of verse language.

Word order aberrations, unusual deletions, etc. Where a phrase has come from syntactically gives the clue to the presence or absence of terminal juncture, and so the presence or absence of a phonemic clause with its primary stress. An interesting subject for investigation might be whether or not all transforms, even the minor and usual adjective transforms, deletion and word order transforms, do not carry a juncture into the surfact structure of the matrix sentence-- certainly all embeddings do.

To return to the verse line. It is now possible to combine what has been said about the verse line with Stockwell's rules for the expansion of IP.

Rule 1

line --> X + line-end juncture

Where X represents a section of discourse (see page 95). This section may be composed in one of two ways: either it consists of a series of phonemic clauses, the last of which is co-terminal with the line, or it consists of a series of phonemic clauses plus segments that do not compose a phonemic clause.* Each phonemic clause carries its own intonation pattern so that the segmental section of the line (X in Rule 1), could then be expressed:

* This could happen at the beginning of a line too, but one need not be concerned with this possibility at the moment.

Rule 2

$$X \text{ ---> } P_1 + IP, (P_2 + IP) \dots (P_n + IP) + (Y) + \text{line-end juncture}$$

Where P represents the segmental section of the phonemic clause and brackets, (), mean 'optional choice' and (Y) represents the optional segmental section that does not comprise a phonemic clause. The segmental sections can then be expanded to syllables by:

Rule 3

$$P \text{ ---> } S_1 + (S_2) \dots (S_n)$$
Rule 4

$$Y \text{ ---> } S_1 + (S_2) \dots (S_n)$$

The line-end can next be incorporated by the rule discussed on page combined with the Stockwell rules to give:

Rule 5

$$\text{line-end juncture ---> } \left\{ \begin{array}{l} \emptyset / IP \text{ ---} \\ /+ / / Y \text{ ---} \end{array} \right\}$$

From that point, the IP can be expanded according to the Stockwell Rules A.B.C.D., above, which become rules 6, 7, 8, 9 for the generation of a verse line.

Refusing the optional Y+line-end juncture (Rule 2) produces lines with final terminal junctures. Choosing Y produces a /+ / juncture which has the effect, impressionistically, of leaving the line in the air, and, linguistically, of giving the

opportunity for an optional secondary stress. (See quotation from Trager-Smith on page 92 above.)

The consolidated rules for the generation of a verse line read as follows:

- 1) line \dashrightarrow X + line-end juncture
- 2) X \dashrightarrow $P_1 + IP_2 (P_2 + IP) \dots (P_n + IP) + (Y)$
- 3) P \dashrightarrow $S_1 + (S_2) \dots (S_n)$
- 4) Y \dashrightarrow $S_1 + (S_2) \dots (S_n)$
- 5) line-end juncture \dashrightarrow $\left(\begin{array}{l} \emptyset / IP \text{ ---} \\ + / Y \text{ ---} \end{array} \right)$
- 6) IP \dashrightarrow C + JP
- 7) C \dashrightarrow $\left\{ \begin{array}{l} \underline{\text{Cont}} \\ \underline{\text{Disc}} \end{array} \right\}$
- 8) Disc \dashrightarrow 001↓
- 9) Cont \dashrightarrow $\left\{ \begin{array}{l} \{002 \downarrow\} \\ \{003 \downarrow\} \\ \{004 \downarrow\} \\ \\ \{021 \uparrow\} \\ \{032 \uparrow\} \\ \{043 \uparrow\} \end{array} \right\}$

Rules 1 - 4 provide for a verse line being composed of syllables organized into phonemic clauses, plus an optional group of unorganized syllables. Rule 5 removes the line-end juncture where the line is co-terminal with a phrase and inserts a /+ / where it is not. The application to the Cummings poem

Nothing is chosen for Y so the line-end juncture is eliminated by Rule 5, and the line ends with the Disc juncture that bounds the fourth phrase. The composition of the line is four phonemic clauses, each with a primary stress.

Lines 2, 3 and 4 are each monosyllabic phonemic clauses, each with a primary stress, but line 5 must be derived as follows:

1	X		line-end juncture
2	P + IP	Y	line-end juncture
3	S S + IP	Y	line-end juncture
4	S S + IP	S	line-end juncture
5	S S + IP	S	/+/
6	S S C+JP	S /+/	
7	S S Disc	S /+/	
8	001 S S √ tommy)	S /+/ we	
9	- - - fails - - -		

In this line, Y is chosen which calls for a /+/ juncture after we as internal to the phonemic clause that ends after steak. In line 6, Y is chosen again giving /+/ after it's as internal to the phonemic clause it's try. These two one-syllable words are odd-man out in the lines where they are placed, but if, for instance, we was not severed by

line-end juncture from the verb to which it would normally be attached, line 6 would become a two phrase line instead of the four phrases and the four beats that have been set up by the expectation of the verse movement established in line 1.

At this point, I should like to take an example of obviously metered verse and see what light the generative consideration of a verse line just completed might throw on the analysis of the verse movement.

The year's at the spring	1
And the day's at the morn	2
Morning's at seven	3
The hillside's dew pearl'd	4
The lark's on the wing	5
The snail's on the thorn	6
God's in his heaven	7
All's right with the world.	8

One can observe that:

- 1) each line is a sentence (and therefore ends with IP).
- 2) each sentence takes the form:

NP is predicate

In all lines except 4 and 8, the predicate position is filled with a preposition phrase. In line 4, the predicate is an adjective phrase transformed from dew has pearl'd (the hillside) and in line 8, the predicate is right with the following preposition phrase functioning as an adverbial of manner.

- 3) there has been an ellipsis transform in each line:

is ==> 's

4) underlying structure would produce phrase
 junctures in lines 1-7 after 's and in line
 8 after right.

i.e., juncture would separate the preposition phrases
 from NP + is + predicate (and pred. ===> \emptyset before
 the preposition phrases in lines 1, 2, 3, 5, 6, 7.)

The regularity of the poem is evidenced by an enormous
 amount of repeated patterning:

- five syllables per line
- terminal juncture at each line-end (Cont
 except for line #8 which ends Disc)
- one mid-line Cont juncture in every line
- 's in every line
- preposition phrase in every line except 4
- two phonemic clauses in every line
- two primary stress in every line.

One might derive line 1 as an example:

<u>Rule 1</u>	X		+ line-end juncture
<u>Rule 2</u>	P + IP	P + IP	+ line-end juncture
	1	2	
<u>Rule 3</u>	S S + IP	S S S + IP	+ line-end juncture
	1 2	1 2 3	
<u>Rule 4</u>	- - fails - -		
<u>Rule 5</u>	S S + IP	S S S + IP	removes line-end juncture
	1 2	1 2 3	
<u>Rule 6</u>	S S C+JP	S S S C+JP	
	1 2	1 2 3	

PIPPA'S SONG.

Line #1	the s ⁰ s	year's s ⁴ S	↓	at s ⁰ s	the s ⁰ s	spring s ⁴ s	↓	
Line #2	and s ⁰ s	day's s ⁴ S	↓	at s ⁰ s	the s ⁰ s	morn s ⁴ s	↓	
Line #3	morn s ⁴ s	ing's s ² s	↓	at s ⁰ s	sev s ⁴ s	en s ² s	↓	
Line #4	the s ⁰ s	hill s ⁴ S	side's s ³ s		dew s ⁰ s	pearl'd s ⁴ s	↓	
Line #5	the s ⁰ s	lark's s ⁴ S	↓	on s ⁰ s	the s ⁰ s	wing s ⁴ s	↓	
Line #6	the s ⁰ s	snail's s ⁴ S	↓	on s ⁰ s	the s ⁰ s	thorn s ⁴ s	↓	
Line #7	God's s ⁴ S	↓	in s ⁰ s	his s ⁰ s	heav s ⁴ S	en s ¹ s	↑	
Line #8	all's s ⁰ s	right s ⁴ S	↓	with s ⁰ s	the s ⁰ s	world s ⁴ s ¹ s	↓	

s = syllable

S = stressed syllable

↓↑ = Cont juncture

↓ = Disc juncture

<u>Rule 7</u>	S S <u>Cont</u>	S S S	<u>Cont</u>
	1 2	1 2 3	
<u>Rule 8</u>	- - fails - -		
<u>Rule 9</u>	0 0 2 ↓	0 0	4 ↓
	S S	S S	S
	<u>the</u> <u>year's</u>	<u>at</u> <u>the</u>	<u>spring</u>

The lines can then be assembled on a diagrammatic grid which gives a vivid visual representation of the verse's regularity. Of course, this was obvious without the elaborate generative process I have just gone through, but the object was to test out the method not to make revelations about this particular example of verse.

There is very little latitude in the way this poem can be read. It is completely metered verse, highly rhythmical and yet it is using the rhythms of speech. "Speech rhythm, and therefore the rhythm of verse," says Abercrombie, "is in the speaker ... it is a muscular rhythm, a rhythm of bodily movement, rather than a rhythm of sound. This is why verse can be immediately recognised and felt as verse in silent reading, which otherwise would not be easy to explain."¹² The rhythm may be bodily but it originates in the thought that forms the sentence and the grammar that holds the language of the thought together, and the grammar of the language is the grammar of the lines.

Perhaps one could have arrived at this kind of verse analysis without going through the hoops of generative grammar. Out of a somewhat involved attack comes a simple diagram based on the syllables in a verse line and their division by juncture into phrases. In the diagram I have marked the primary stresses because in this test case, they follow the lexical stresses of the words; there is no alternative. But it should be noticed that in this breakdown, there is no obligation to place the primary stress; it will be on one of the syllables in the phonemic clause, but which, can, if need be, be a matter of rhetorical placing. Also pitch: the pitch I have assigned is quite arbitrary; I have chosen levels to justify the types of juncture; the lines might be said in other ways.

In the next two chapters, I use this type of diagram based on a line-syllable grid, but rather than analyse the possible phonetic realisation theoretically according to the underlying structures, I have listened to the poet's reading and have graphed the sound of his voice. From this graph, as will be seen, I have been able to recognise the major junctures as intervals of voice quiet though the presence of other structural junctures is also evident from the line-ends of the verse and from the underlying syntax. From this sort of analysis, I have

been able to make statements about the verse structure of unusual unmetered verse which I could not, I think, have arrived at in any other way.

N O T E S

CHAPTER V: THE VERSE LINE

- 1 Albert B. Lord, The Singer of Tales (Harvard UP., 1960), p. 21.
- 2 Roman Jakobson, "Linguistics and Poetics," S. Chatman and S. R. Levin eds., The Language of Literature, (NY., 1967), p. 309-310.
- 3 Thomas A. Sebeok, "Decoding a text: Levels and Aspects of a Cheremis Sonnet," Style in Language, T. A. Sebeok ed. (Cambridge, Mass., 1960).
- 4 George L. Trager and H. L. Smith, Outline of English Structure, Studies in Linguistics (Oklahoma, 1951) #3, p. 39, Section 1.63.
- 5 Charles Olson, "Projective Verse," D. M. Allen ed., The New American Poetry, 1945-1960 (NY., 1967), pp. 132-155
- 6 - - pp. 388-389
- 7 Jakobson, "Linguistics and Poetics" (note 2, above), p.365.
- 8 R. B. Stockwell, "The place of Intonation in a Generative Grammar of English," H. B. Allen ed. Readings in Applied English Linguistics (NY., 1964 ed.), p. 193.
- 9 - - p. 197
- 10 - - p. 196

... The rules are written on the assumption that we have three stresses ('word stresses') already given on the formative elements from the lexicon . . . In any case there is a maximally prominent syllable in any phrase which is correlatable with the center (the middle digit) of the intonation contour, and that syllable is the last syllable before the C which carries maximum lexical stress. All such maximum lexical stresses will turn out, by these rules, to be what Trager and Smith, along with many others, call secondaries, except the last one before C, which will be what they call a primary. Besides assuming word stress, these rules also assume 'idiom stress' - i.e. the stresses on constructs like White House which are generated from what

Householder has called the 'idiom grammar' rather than from the sentence grammar. Items from the idiom grammar are, in other words, viewed simply as part of the available lexicon.

The two morphophonemic expansion rules, then, are these:

- (7) $X_n, Y, O_1 O_2 O_3 /, Z_n J P^m \text{---} O_1 X_n, O_2 Y, Z_n O_3 + /$
- (8) $Y, O_1 O_2 O_3 /, Z_n, J P \text{---} O_2 + Y, Z_n O_3 + /$

. . .
 What rules (7) and (8) accomplish is simply this: they take a contour formative, a C, which is generated in such a way that it has a position in a string, just as any other formative has a position, and they distribute the components (itches and junctures) of the C over the whole sequence back as far as the beginning (or last JP) and up as far as the next JP - in other words, through the whole phrase. It is the POSITION of the contour in the sequence of formatives that determines which segmental formative receives the acute accent (phrase primary) and which receive the circumflex (word primary).

- 11 Stockwell (note 8, above), p. 198
- 12 David Abercrombie, Studies in Phonetics and Linguistics (Oxford UP, 1965), p. 19.

CHAPTER VI

E.E. CUMMINGS: "AN AUTHOR OF PICTURES, A DRAUGHTSMAN OF POEMS."

I DRAUGHTSMAN OF POEMS

This chapter begins the second section of the thesis in which the linguistic tools developed in the foregoing chapters will be applied to the verse structure of specific poems.

'Verse structure' is often taken to mean only the rhythm of a poem, what I prefer to call the movement. Those who deal in terms of metrics often seem to put 'versification' or 'prosody' into a separate compartment, and to consider 'meter' apart from, let us say, syntax. If, however, one deals (as I do) strictly in language terms, 'verse structure' cannot be so neatly compartmentalised. The configuration language features, as

the previous chapters have considered them, may account for the movement of the verse, but they themselves must be accounted for by the underlying phrase structure. But poets use language in a special way. Not only as the special verse language which I consider an extension of the common language, but also as verse language peculiar to the individual poet. So that, if one is to account for the functioning of juncture-pitch-stress in verse movement, one has got also to account for the underlying syntax in terms of the language itself, in terms of verse extensions of the syntax and in terms of the poet's idiosyncratic use of both. This is what I have called the poet's extended language competence (Chapter I, page 8). That this competence should be unseverably part of the main language is an idea that is basic to this thesis.

To get at the structure of E.E. Cummings' verse, one must consider how it is made, and what it is made of, as well as how it moves. It is made up of lines generated from syllables; it moves according to the cross patterning of line-ends and phonemic clauses (connected by their common factor of juncture); and it is structured according to the syntax of the Cummings' grammar of English. This is sometimes a highly idiosyncratic grammar that has an important semantic function--to ginger new life into old words--but it is also the design of the language structure,

and as such will come in for analysis as part of the other language constituents of the poem.

E.E. Cummings is notorious for the irregularity of his lines. The Cummings' line varies in length, is printed to variable margins, ends in the middle of a word and sometimes does not consist of a word or a syllable or even a phonetic segment--as when a punctuation mark is all there is to a line.

The unwary look on this decorative play with the line on the page as a sort of showing-off. "Messing up the typography through affectation and excess of ambition," said one critic.¹ But the way the words lie, the way the lines begin and end and how they are stacked or spread, the capital letters or the lack of them, and the punctuation (which is devised so that it shall punctuate) are all part of a Cummings audio-visual poetic, a highly organized and finely worked technique of verse structure. "There is a definite reason for everything he does with special values on the pages...." said the printer, S.A. Jacobs, who liked to give himself the title of "Typographer to E.E. Cummings." "There is a concomitant result in that remote underlying field of aesthetic phenomena--the kinaesthetic. In short, there are elements of empathy, of einfuhling, in the typography of Cummings that cannot be arrived at by a haphazard use or misuse

of those spacial elements."²

Cummings gave himself his own paradoxical title, "author of pictures, draughtsman of poems," in the foreword to the publication in book form of reproductions of his paintings. In the same book, he worked the paradox a bit further. He talks about children's drawings in terms of parts of speech, and calls his own learning to write a process of "portraiture."

While a painfully hand achieved likenesses of even polysyllabic sitters, the gradually fingers overcame perspective, his clumsily wrist contrived verses.....³

There are poems by Cummings which are so much a matter of drawing with type that they cannot virtually be vocalised. You read them from the page as you would a line drawing and their bits of words flash bits of signals of their referents.⁴ There is a kinaesthetic effect you can feel and even an audile image you can hear (with your mind's ear), but what expressible sound could there be, for instance, for the fluttery hands of Jimmy Savo, sketched in punctuation marks?

j1
&
jim, jimm
; jimmy

s:
A
V
O(
..;

And in the following poem; although you can hear the bells, you can't say them.

```

    (be
      llsbe
        lls)
          b
            (be
              llsbel)
                ells
                  (sbells)6

```

These are examples of the draughting of one kind of poem, but there are others. There are poems that sing ('sing' is a word Cummings often uses about poems),⁷ and poems that move ("I'm abnormally fond of that precision which creates movement," he says).⁸

In the draughting of movement, the line is his musical staff out of which he can draw not only the rollicking square dance sort of movement that there is in the poem quoted in Chapter V (page 103), but also two different kinds of syncopation.

```

    Jimmie's got a goil
                          goil
                            goil
                              Jimmie

    's got a goil and
    she coitnly can shimmie

    when you see her shake
                          shake
                            shake
                              when

    you see her shake a
    shimmie how you wish that you was Jimmie9

```

and:

the the
 the pink
 Tartskids with
 thecas-tanets
 in5/4; Time
 chick.chick¹⁰

In contrast to the unsayable poems of which
 I gave Jimmy Savo and (be as examples, dance
 llsbe
 lls)

poems like the last two quoted are wonderful to read
 aloud, and the way they are drawn is the drawing of
 the beats of sound. It is quite wrong, I think, to
 regard Cummings as a solely visual poet and to put
 him, as Harvey Gross virtually does, outside the scope
 of prosody.¹¹ Cummings himself said his poems were
 "essentially pictures,"¹² but all the same, there
 were some of them that he liked to read aloud. Cummings
 was well-known as a reader, and the recordings that
 he made during his lifetime and which are still available,
 are musical performances full of rhythmic bravura.

The fact that the recordings have a public
 and so do his books, puts Cummings into the class of
 twentieth century poets who have two sorts of audience;
 readers and listeners, and it means that an analysis
 of the structure of the verse can be worked out from
 two different (and equally authentic) points of view.

The printed text can be considered from the point of view of silent reading, with underlying structure, visual signals, punctuation, etc., and a theoretical analysis into phonemic clauses with intonation patterns and juncture points can be arrived at. Then the poet's reading can be listened to, and observable features of juncture, etc., can be correlated with the analysis on paper.

II THE CUMMINGS' GRAMMAR OF ENGLISH

I said in my introduction (Chapter I, page 9) that I had been affected by the attitude of T-grammar towards the intuition and innate competence of the native speaker, and I suggested that the poet's language powers as a poet might be thought of as a sort of extended language competence that enables him to perform in a poetic way. I find the opportunity of hearing a poet's own reading puts him, as it were, in the position of native informant for the poem in question. The way he reads the poem throws light on the way he is using the language; the pauses he leaves and the syllables he stresses clarify his syntax. Everybody, I think, has had the experience of the poem that seemed obscure on the page coming to life when the poet reads it. All the same, there are dangers in using the poet's reading as a way of analysing the structure. One

cannot rely--as part of an analytical process--on what one hears (see Chapter II, page 34, and note 21, page 47 and note 31). Everything there is to be said about juncture-pitch-stress must be combined with the syntax and the "recoverability of the Deep Phrase Marker."¹³

Sentences produced by the Cummings grammar are often a long way from what normal grammar would produce. For instance:

the of an it ignoblest he¹⁴

or

and swim so now million many worlds in each¹⁵

These lines can hardly be called orthodox, but, at the same time, they are better not called 'deviant' until the whole syntactical structure has been disentangled. The concept of 'ungrammaticalness'¹⁶ does not seem to me to be appropriate to the poetic use of language. On the contrary, it is the close scrutiny of the structure underlying the abnormal surface and the study of the grammatical connections with (rather than deviations from) the grammar of the main language that could open up ways to consider the 'creative' use of language and the language strata of personal styles. This chapter will therefore consider the Cummings grammar of English under grammatical headings, and then again in the context of the three poems analysed.

There are three grammatical fields in which Cummings goes his own way; these are in the formation of negatives, in the lexical choices he makes at the categorial level, and also in his lexical choices at the sub-categorial and selectional level.

Cummings has his own ideas about negative and positive, and has characteristic linguistic ways of expressing them. He is very fond of the negative prefixes; he uses un- constantly and in circumstances where no one else would, and he makes non- function in the same way: unworld, undead,¹⁷ unday,¹⁸ unreason¹⁹ and, of course, nonlectures. But Cummings is not the first nor the only writer to do this sort of thing. Jespersen²⁰ quotes Kipling and Maurice Hewlett as giving unfriends to contrast with friends and Carlyle as setting unthinkers against thinkers. And for the other sort of un- prefix, the so-called privative prefix, there is tradition in poetry behind Cummings' sort of usage. Shakespeare has

she treads the path that she untreads again²¹
and Cummings:

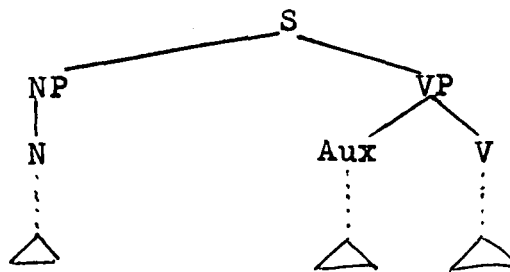
most innocently undecaying friend²²

(given the scalpel, they dissect a kiss;
or, sold the reason, they undream a dream²³)

It is the seemingly unprecedented choices at the categorial level of the phrase marker that are most eagerly pounced on as being deviant, yet even

these--perhaps particularly these--will bear looking at.

The categories of a language are part of its basic architecture, and, by and large, where a construction calls for a certain category, to choose something from a different category is likely to jeopardise the structure of the sentence and bring it tumbling down into nonsense.²⁴



Where \triangle is dominated by N, as diagrammed above, some kind of a noun is called for. Yet line 3 of the Cummings sonnet, life is more true than reason will deceive (Poem A of the three poems analysed later in this chapter.) reads:

deeper is life than lose:higher than have³¹

That is to say, instead of a noun or a noun phrase following than as it normally would, Cummings has chosen to use the unmarked form of a verb. Normal usage might generate nominalizations in various ways to fill the second noun phrase. Possible choices might be:

life is deeper than	[you might think
	[the sea
	[the deepness (sadness) you
		feel when you lose
		something

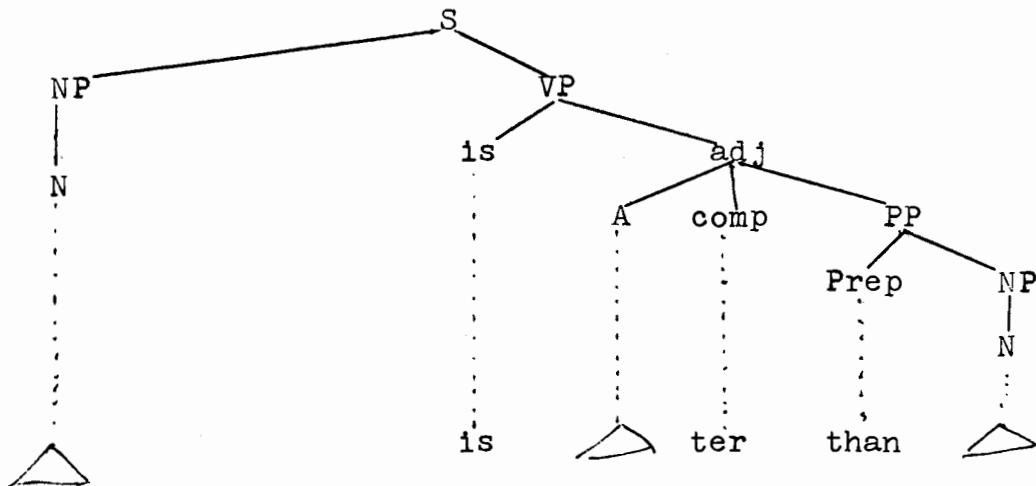
(life is) higher than [you (might) think
the sky
the highness you feel
when you have
something

The structure of this line

deeper is life than lose; higher than have
derives, I think, from two underlying sentences with
similar phrase structures:

- i) life is deeper than lose
- ii) life is higher than have.

The P-marker for either sentence would be of this
order:



Deletion and word order transforms would then apply
to produce the line as written.

It is possible that Cummings' line is the
result of deletion transforms operating on the last
of the three nominalization choices suggested above,
but I think the aberrant categorial choice is more
in character. He has chosen the unmarked, un-nominalized
form of the verb where regular language would call for

something from the noun category. He does this, I think, because of what he calls his "ineluctable preoccupation with the verb."²⁵ He is more than ineluctably preoccupied; he is passionately involved and he will use a verb or something taken from the verb phrase wherever he can. In the book that reproduced his paintings, in speaking about child art, he says:

houses, trees, smoke, people etc are depicted not as nouns but as verbs...consequently to appreciate child art we are compelled to undress one by one the soggy nouns whose agglomeration constitutes the mechanism of Normality, and finally liberate the actual crisp organic squirm--the IS.²⁶

The quote from the same book that I have given on page 115 of this chapter shows his verb passion extending to a preference for adverbs in places that would normally call for adjectives: a painfully hand, the gradually fingers, his clumsily wrist. In a wonderful way, this really aberrant construction does succeed in pushing the inert nouns into some kind of movement where the more orthodox adjectives would have left them just the way they were. The adverbs in this paragraph have obvious places attached to verbs (they are all adverbs of manner that form part of the expanded verb phrase), but Cummings pries them out and sticks them onto nouns to get the effect he wants.

Unusual choices at the sub-categorial and selectional levels do not, I think, seem so aberrant,

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yet they are one of the devices that put life into the language and are interesting to consider in language terms.

The sub-categorial level in the mapping of a grammar is the point at which the choices move out of the plain selection of category--i.e., or noun or verb--into a choice of what kind of noun or verb. There are verbs, for instance, that require objects and there are nouns that require a determiner; these give the sub-category of 'transitive' verb or 'common' noun.²⁷ But these classes can be further subdivided by selectional rules into, say, nouns which are animate or inanimate, human or nonhuman, etc., or verbs that require, say, animate subjects or objects.²⁸ To exercise selectional rules in an idiosyncratic way is a common feature of verse language; for example, the time-honoured figure of the transferred epithet. For example, the adjective sleepless would be selected for a [+animate] noun, but is 'transferred' to the [-animate] pillow to give, the stock example:

he tossed all night on a sleepless pillow

A comparable process can be seen in Dylan Thomas'

a grief ago

which selects a noun with no time feature in a position where a time feature is called for by the adverbial of time that follows.

It is quite common in somewhat extended speech to find liberties taken with the selectional rules; in fact, I think this is the process by which metaphorical extensions of meaning are taken into normal language use. Perhaps it was the intuitive feeling that selectional rules can be manipulated that gave rise to the outcry that went up when the famous sentence

colourless green ideas sleep furiously

was cited as an example of ungrammaticality. Cummings uses this type of special verse grammar rather less than I, for one, would have expected. Leafing through Poems 1923-1954, I found only a few examples:

so in darkness ourselves go, mind in mind²⁹

I am so glad and very³⁰

and

we are so both and oneful³¹

though I find it hard to think of any type of adjective that could be replaced by oneful, which so exactly fills the bill and yet is hardly an orthodox language choice.

Cummings makes startling assaults, too, on accepted word order, and although the results are pretty bizarre, the changes have not destroyed the meaning:

over you reels and me a moon³²

and

(for love are in we am in i are in you)

in a poem which ends

For love are in you am in i are in we³³

III THREE POEMS

One of the (to me) surprising results of my determination to keep E.E. Cummings within the grammatical fold and to regard his language as not essentially different from my own has been to find his verse structure attached to tradition in more instances and in more ways than one might think.

There was no particular reason for choosing the three poems to be analysed except, perhaps, that they contrasted well with each other. They are a sonnet, a song-lyric and a poem that, although it looks as if it might be one of his purely visual poems, has nevertheless been chosen by the poet to be recorded in sound.

The poet's voice has been dubbed from the record onto tape (see Appendix Z), but perhaps the more convenient way of bringing the sound element into the analysis is by way of the graph which records the voice on paper.* It must be emphasised that in this

* Graphs of the Cummings poems can be found in the sections where the poems are discussed individually.

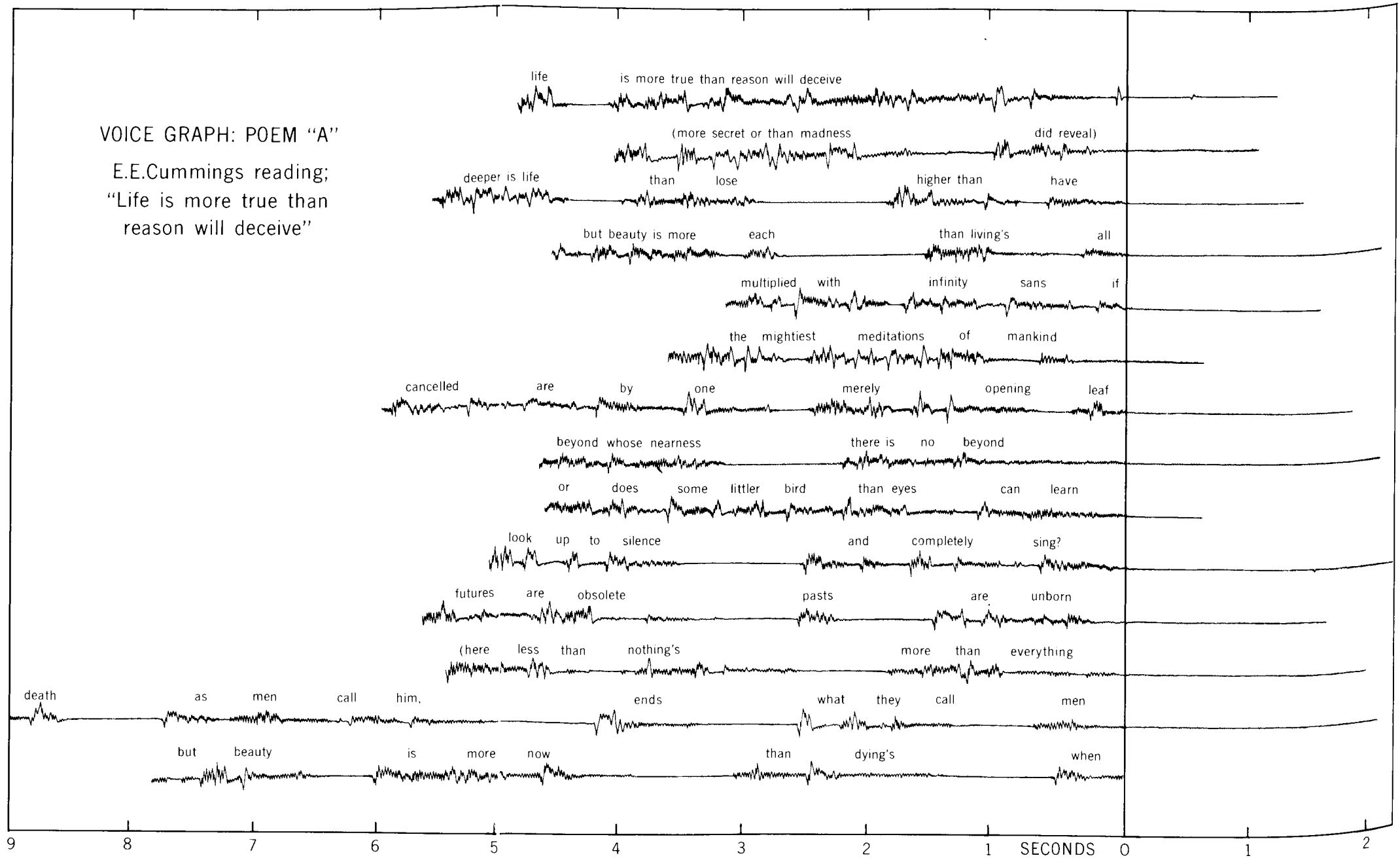
graph, the oscillations of the needle recording the voice represent nothing more than voice noise. One is tempted to read stress points into the peaks of the graph, but all the acoustic factors of frequency, resonance, etc., contribute to the swing of the needle along with the force of amplitude (just as consonantal stops can produce a short stretch of inactivity in the needle), and it is a mistake to try and separate one from the rest. Quite apart from these inappropriate interpretations, what can be seen as an objective observable fact is the contrast between activity and inactivity; between noise and quiet. The first step in the analysis, therefore, is to divide the poem up according to the observable intervals of quiet on the graph, assume that these represent some sort of terminal junctures and set up a phrase diagram. This has been the process applied to each of the three poems and from the result the structure of the poem has been analysed.

POEM "A"

life is more true than reason will deceive	1
(more secret or than madness did reveal)	2
deeper is life than lose: higher than have	3
-but beauty is more each than living's all	4.
multiplied with infinity sans if	5
the mightiest meditations of mankind	6
cancelled are by one merely opening leaf	7
(beyond whose nearness there is no beyond)	8

VOICE GRAPH: POEM "A"

E.E.Cummings reading;
"Life is more true than
reason will deceive"



or does some littler bird than eyes can learn 9
 look up to silence and completely sing? 10
 futures are obsolete;pasts are unborn 11
 (here less than nothing's more than everything)12

death,as men call him,ends what they call men 13
 - but beauty is more now than dying's when³⁴ 14

1) Analysis from print

The poem is laid out as three quatrains and a couplet which suggests Discontinuous junctures at ends of lines 4, 8, 12 and 14. The punctuation marks would also suggest junctures both at line ends and within the lines. The punctuation used in this poem is:

() : = : ? : i : i . .

There are ten syllables in every line, and punctuation marks operate to stop twelve lines out of the fourteen, although the punctuation sometimes operates from the beginning of the next line rather than from the end of the one that is being stopped. Lines 5, 6 and 9 are not stopped by punctuation.

2) Analysis from sound

The most striking thing about the voice graph of this poem is the duration of the periods of quiet at the ends of the lines: over two seconds of quiet at the ends of each quatrain and very definite pauses between the other lines, even between those without punctuation. Rather more than half a second between

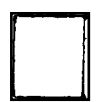
PHRASE DIAGRAM

POEM A : E.E. CUMMINGS : 'life is more true than reason will deceive

#1	life / 4 S	.3 secs	2 s	is s	more s	true s	than s	rea 4 s	son s	will s	de s	ceive / 4 S	1.2 secs		
#2	more 2 s	se s	cret s	or s	than s	mad 4 / S	ness 2 s	→	did 2 s	re s	veal 4 / S	1 ↓	1.4		
#3	deep s	er s	is s	life / 4 S	.4 ↓	than 2 s	lose / 3 S	1.0 ↑	high 4 ^ s	er s	than 2 s	+ / 4 S	1.4 ↓		
#4	but 2 s	beau 4 ^ s	ty s	is s	more 2 s	+ / 1 S	each 4 / S	1.2 ↓	than 2 s	liv ^ 3 s	ings 2 s	↑ / 4 S	1.9 ↓		
#5	mult 3 / S	i s	plied s	with s	+ / 1 S	in s	fin ^ 4 S	i s	ty s	sans s	if 2 s	1.5 ↓			
#6	the s	migh / 4 S	tiest s	med s	it s	a s	tions s	of s	man s	kind 2 s	.5 ↑				
#7	can 4 / S	cell s	are s	+ by s	one ^ 2 s	→	mere 2 s	ly s	ope / 4 S	ning 2 s	↑ / 4 S	leaf 1 ↓	1.7		
#8	be s	yond s	whose s	near / 4 S	ness 2 s	→	there 2 s	is s	no / 4 S	be 3 s	yond 2 1 s	2.2 ↓			
#9	or s	does s	some s	litt 4 s	ler ^ 3 S	bird s	than s	eyes s	+ / 2 S	can s	learn / 4 S	.6 ↓			
#10	look 2 s	up s	to s	si / 4 S	lence 2 s	→	and 2 s	com / 4 S	plet s	ly 3 s	sing 4 s	? ↑	2.3		
#11	fut s	ures s	are s	ob / 4 S	so s	lete 2 s	.6 ↑	pasts 4 / S	.6 ↓	are 2 s	un s	born 4 / 1 S	1.6 ↓		
#12	here 2 s	less / 3 S	than 2 s	+ / 2 S	noth 4 ^ s	ings 2 s	.7 ↑	more 2 s	than s	ev / 4 S	ry s	ting 1 ↓	2.0		
#13	death / 4 S	.7 ↓	as 2 s	men s	call / 2 S	him 2 s	.8 ↑	ends 4 / S	.8 ↓	what 2 s	they s	call 4 / S	→	men 4 / 1 S	2.1 ↓
#14	but 2 s	beau / 4 S	ty 2 s	→	is 2 s	more s	now 4 / S	.7 ↓	than 2 s	dy / 4 S	ing's 2 s	↓	when / 1 S	↓	

↑ = continuous junctures

↓↑ = discontinuous junctures



= periods of voice inactivity

lines 6 & 7 and 9 & 10, and a 1.6 break between lines 5 & 6.

From the voice graph, then, one can say that all the line-ends carry terminal junctures and that therefore all lines are co-terminal with the phonemic clauses which they contain. Pauses within the lines are represented on the attached phrase diagram and the number of phrases per line varies from line 6 which is spoken as one phrase to line 13 which is broken by observable pauses into five phrases. Cummings reads slowly and there may be more /±/ junctures, with the consequent possibility of secondary stresses which the graph did not record.

The movement is not rhythmic, the clause and stress patterning is not regular and the progress of the reading is deliberate and reflective, more or less according to the divisions of normal speech.

The abnormal syntax and lexical choices have parallels in ordinary usage:

- Line 1 parallels, say, more true than people think and reads accordingly.
- Line 2 parallels a construction that might be, say, more secret or more private than madness did reveal with the second more + adj

deleted by a Cummings grammar transform.

Line 4

more each is paralleled by the regular use of, say, more true and reads accordingly.

The poem has a rhyme scheme of identical final consonants in lines 1 & 3, 2 & 4, 5 & 7, 6 & 8, 9 & 11, 10 & 12, with full rhymes for the final couplet. The rhyme consonants are all continuants, and eleven of them share the features:

$$\left[\begin{array}{l} + \text{consonant} \\ + \text{voice} \\ + \text{diffuse} \\ + \text{continuant} \end{array} \right]$$

The exceptions are:

/d/ which is [- continuant], but the completeness of the interruption is mitigated by the preceding nasal /n/.

/f/ is [- voice].

/ŋ/ is generally considered [+ compact].

E.E. Cummings' speaking voice is very close to British RP. He has no r sounds in words like learn. He reads more slowly than normal speech and sometimes draws out stressed syllables where the vowel is tense. There is a marked rise and fall in pitch. In spite of the regular number of syllables per line, the time taken to enunciate each line varies considerably.

There are many examples in this poem of the Cummings idiosyncratic use of language and of his

extensions of the rules of normal grammar. Some of these are worth considering in detail.

Line 3 was discussed above (page 122)

Line 4

-but beauty is more each than living's all

This is an idiosyncratic sub-categorial choice. more functions as a comparative and calls for a lexical choice of $\left[\begin{array}{l} + \text{adj} \\ + \text{more} \end{array} \right]$. That is to say of the class of

adjective that can be used with more. Cummings chooses

$\left[\begin{array}{l} + \text{adj} \\ - \text{more} \end{array} \right]$. That is to say, he chooses an adjective, but

not of the class that can be used with more.

There is ambiguity in the 's (which is no doubt intentional) as to whether it means living is all or the all of living. In either case, all is functioning as $\left[+ \text{noun} \right]$ --a function which is well-founded in the main language, as in that is all, or as in the use of all as a synonym for everything. In contrasting each and all in this line, Cummings is, I think, using each to convey 'minute particulars' and all to convey the generality, but to discuss the implications here is beyond the scope of this paper.

Lines 5 and 6 connecting to line 7

multiplied with infinity sans if the mightiest meditations of mankind cancelled are ...

The syntax here is complex. As I read it, the two

full lines plus the first two words in line 7 derive, after transforms of deletion and word order, from:

<u>sans if</u>		<u>the mightiest meditations of mankind</u>
PP		NP (a)
1		2

<u>are</u>	<u>multiplied</u>	<u>with infinity</u>
aux	V	PP
3	4	5

<u>the mightiest meditations of mankind</u>	<u>are</u>	<u>cancelled</u>
NP (b)	aux	V
6	7	8

1 2 3 4 5 6 7 8 =====> 1 4 5 6 7 8, to give

sans if multiplied with infinity
1 4 5

the mightiest meditations of mankind
6

are cancelled
7 8

That is to say, NP(a) is deleted because it is identical to NP(b), are is also deleted for the same reason. Word order transforms (verse inversions) would then apply to give

1 4 5 =====> 4 5 6 sans if multiplied with infinity
1 4 5

=====> multiplied with infinity sans if
4 5 1

and

7 8 =====> 8 7

are cancelled =====> cancelled are
7 8 8 7

The effect of these transforms is to ensure a JP after if (sans if has been moved as a phrase), and so prevents the possibility of reading sans if the mightiest. In

the same way, the fact that mightiest meditations of mankind has been moved as a phrase, ensures a JP at the end of line 6. The verse word order transform that changes are cancelled to cancelled are inserts a juncture after are.

In line 7, an adjective and a passive transform have operated earlier to give:

one leaf is merely opening ==> one merely opening
leaf

one leaf cancels something ==> something is
cancelled by one
leaf

something = the mightiest meditations of mankind

Line 13 is syntactically very complex. men is a sort of syntactical pun used first in the impersonal way (like French on or German mann). That is to say, the line could read:

death as they call him

but it does not, because Cummings wants the impersonal they to function in its living form, which it does by introducing it into the line after men so that it appears that the usual pronoun transform has substituted they for men. In its final use, men--by itself a single stressed monosyllable in a phonemic clause--functions well emphasised, in the living meaning of the word.

Line 14--the choice of now and when in this line is another example of Cummings' "ineluctable preoccupation with the verb." Both words have the feature [+ adverbial]

and normally function in the predicate as adverbs of time. Cummings has switched them over into an adjective slot according to the same sort of personal grammar organization that was operating when he wrote the clumsily wrist quoted on page 123 above.

This is a highly worked, compacted poem. The poet's reading might be used to throw light on difficult syntax (although I think most of it can be explained by mapping the underlying structure), but the main contribution of the voice is to underline the existence of terminal junctures at line-ends. There is not much to be shown about the movement of this poem, but in the next two poems, this will be the main consideration.

POEM "B"

stanza 1	"sweet spring is your time is my time is our time for springtime is lovetime and viva sweet love"	1 2 3 4
stanza 2	(all the merry little birds are flying in the floating in the very spirits singing in are winging in the blossoming)	5 6 7 8
stanza 3	lovers go and lovers come awandering awondering but any two are perfectly alone there's nobody else alive	9 10 11 12
stanza 4	(such a sky and such a sun i never knew and neither did you and everybody never breathed quite so many kinds of yes)	13 14 15 16
stanza 5	not a tree can count his leaves each herself by opening but shining who by thousands mean only one amazing thing	17 18 19 20

stanza 6	(secretly adoring shyly	21
	tiny winging darting floating	22
	merry in the blossoming	23
	always joyful selves are singing)	24
stanza 7	"sweet spring is your	25
	time is my time is our	26
	time for springtime is lovetime	27
	and viva sweet love"	28

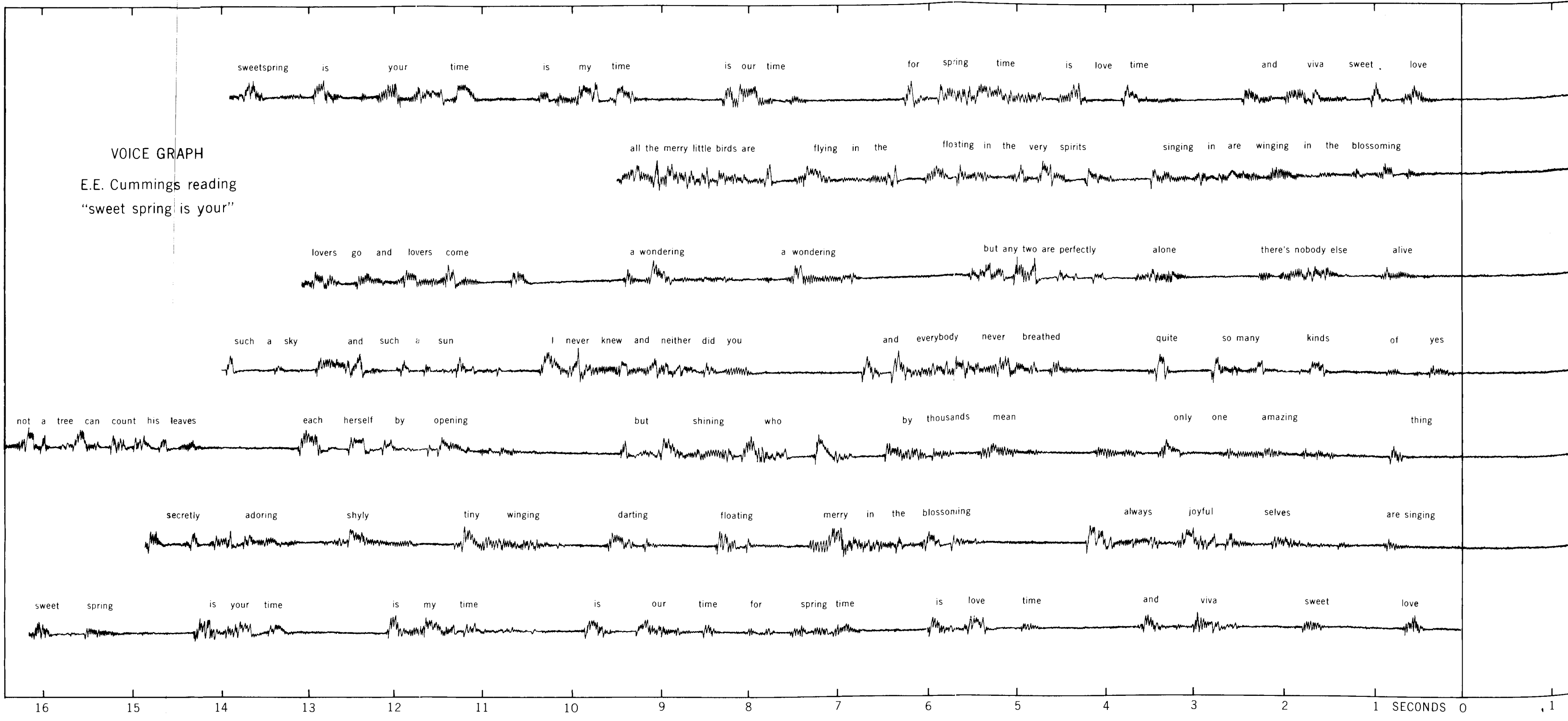
This little song poem is an effective piece of evidence that Cummings is not purely a visual poet, that there is something for the ear in his "drawing" of poems. The four line stanza pattern is there for the eye and so is the fact that the first and last stanzas are in quotations. These quotations give the clue that the poem is in the manner of homage à and is a Cummings version of the Shakespeare song, "It was a Lover and his Lasse" from As You Like It. Cummings pays his homage in nonlecture 235 at the end of which he reads what he calls "five spring time celebrations which I love even more than if they were my own," and the As You Like It song is among them.

In this poem, he not only makes the Shakespearean points, 'Sweet lovers love the spring,' the Lover and his lasse 'o'er the green corne field did passe,' 'therefore take the present time' and 'the Birds do sing,' but he captures the song rhythm and in his reading approaches the pitch patterns and intervals of the well-known contemporary setting by Dr. Thomas Arne. Line 5 in the Cummings all the merry little birds

is almost exactly the rhythm of the Shakespeare-Arne, hey ding-a ding-a ding and the melody of the phrase spring time and ring time--a descending interval with the high pitch on spring and ring comes out very clearly in Cummings' reading of our time, your time, my time and, of course, spring time.

VOICE GRAPH

E.E. Cummings reading
"sweet spring is your"



sweetspring is your time is my time is our time for spring time is love time and viva sweet love

all the merry little birds are flying in the floating in the very spirits singing in are winging in the blossoming

lovers go and lovers come a wondering a wondering but any two are perfectly alone there's nobody else alive

such a sky and such a sun I never knew and neither did you and everybody never breathed quite so many kinds of yes

not a tree can count his leaves each herself by opening but shining who by thousands mean only one amazing thing

secretly adoring shyly tiny winging darting floating merry in the blossoming always joyful selves are singing

sweet spring is your time is my time is our time for spring time is love time and viva sweet love

16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 SECONDS 0 ,1

Analysis from sound

The sound graph of this poem shows the stanzas to be of remarkably similar length. Except for stanza 2 (spoken in 9 seconds on, I suspect, one breath), the stanza time varies between 13 and 16 seconds with 17 seconds for the ritardando finale repeat of stanza 1 in stanza 7. There is nothing to suggest that the breath-group as a unit has anything to do with the organization of this poem.

The distribution of the long periods of voice quiet on the graph coincide with the breaths between the stanzas. There seem to be terminal junctures at the line-ends of stanzas 3, 4, 5 and 6--there are observable intervals of voice quiet--but the problem is to account for the line patterns of the other three stanzas.

The repeat of stanza 1 at the end has the same kind of reading, but with additional breaks introduced into lines 27 and 28. The intervals of quiet in the first three lines of both stanzas break the three lines up into six phrases that straddle the end of lines 1 & 2, 25 & 26 with the phrases coming together with the lines to end lines 3 and 27. In stanza 2, there are phrases straddling the ends of lines 6 & 7. The line arrangement in this poem is, I think, a good illustration of the operation of the line-end juncture.

POEM "B" E.E. CUMMINGS :: sweet spring is your

I
 line 1 sweet spring is your
 s S 3 ↓ + 2 s S 4 +
 1
 2 time is my time is our
 s 3 ↓ 2 s S 4 s 3 ↓ .2 2 s S 4 +
 2
 3 time for spring time is love time
 s 3 ↓ 1 s S 4 s 3 ↓ .6 2 s S 4 s 2 ↓ .6
 3
 4 and vi va sweet love
 s s s s S 4 1 2.2 ↓
 4

II
 5 all the mer ry litt le birds are
 s s s s s S s .2 ↑
 6 fly ing in the floa ting in the
 S s s s .2 ↑ S s s s +
 7 ve ry spir its sing ing in
 s s S s .1 ↑ S s s +
 8 are wing ing the blos som ing
 s s s s S s s 1.8 ↓
 8

III
 9 lov ers go and lov ers come
 s s s s s S 4 ↓ 1.0
 10 a wan der ing a won der ing
 s S s s .1 → s S s s 2 ↓ .7
 11 but an y two are per fect ly
 s s s s s S s s 2 → .1
 12 a lone thrs no bod y else a live
 s 3 ↓ .3 s s s s S 4 ↓ .1 s S 4 1 ↓ 1.9 secs
 12

IV
 13 such a sky and such a sun
 s s S .1 s s s S 4 ↓ .3
 14 I ne ver knew and nei ther did you
 s s s s s s s S 1 .9 ↓
 15 and ev ry bod y ne ver brea- thed
 s s s s s s s S 2 .6 ↑
 16 quite so ma ny kinds of yes
 S .4 s S 4 2 ↑ .1 s s S 3 1 2.0 ↓
 16

V
 17 not a tree can count his leaves
 s s s s s S 4 ↓ .8
 18 each her self by ope ning
 s s s s S 2 3 ↓ .9
 19 but shi ning who by thou sands mean
 s S s .1 s .2 S s s 4 ↓ .5
 20 on ly one a maz ing thing
 s s s s S 4 s .1 S 1 1.8 ↓
 20

VI
 21 sec ret ly a dor ing shy ly
 s s s s s S 4 2 ↑ .4
 22 ti ny wing ing dart ing floa ting
 s s S 3 2 ↑ .3 S s 2 ↑ .2 S s 2 ↑ .3
 23 mer ry in the blos som ing
 s s s s S 4 s s 2 .6 ↑
 24 al ways joy ful selves are sing ing
 S s s s s .3 ↓ s S s 3 1 1.7 ↓
 24

VII
 25 sweet spring is your
 s S 4 ↓ .4 s S 4 +
 26 time is my time is our
 s 4 ↓ .4 s S 4 s ↓ .5 s .1 S +
 27 time for + spring time is love time
 s 2 → s .1 S 4 s 2 → s S .2 S 4 ↓ .6
 28 and vi va sweet love
 s S s 4 2 ↑ .4 S .7 S ↓
 28

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Lines 1 & 2, 25 & 26, 6 & 7 are all generated after the pattern of Rule 2 (see Chapter V, page 102) and call for a line-end /+/ juncture. No pause shows on the voice graph, but if the line-end did not signal "that hair of time suspended" that Olson said the end of a Cummings line meant, the words of the phrase would run together, the stress would fall on time and the rhythm pattern that Cummings has borrowed from Shakespeare would be lost. In stanza 2, the breaks of voice quiet and the line-end junctures operate to throw the stress onto the root of the -ing words with the pitch of the voice producing the swooping effect of the intention of the stanza.

Stanza 3 is an amalgam of Cummings and Shakespeare with the line-end juncture of line 3 visible on the graph. Stanza 6 repeats the pattern of -ing words that there was in stanza 2, but here the junctures coincide with the line-ends, and junctures inside the lines make tiny winging, darting, floating, merry in the blossoming into separated phrases.

The predominating acoustic quality of the syllables is the -ing sound /I /, and the combination of the diphthong /ai/ with a nasal. In reading this poem, Cummings prolongs these syllables with considerable variation in pitch level.

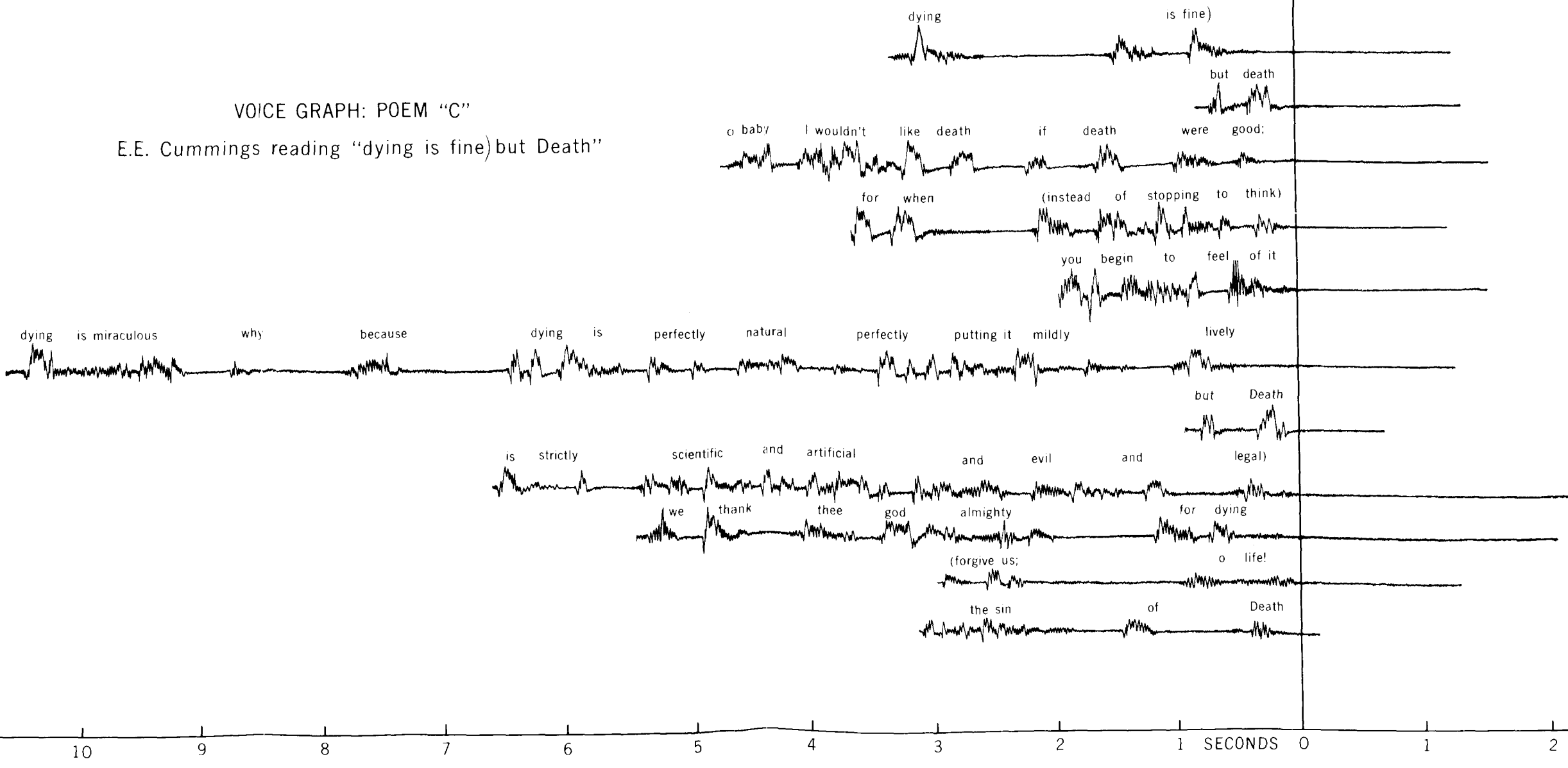
Intakes of breath could be heard on the recording

at the places shown on the phrase diagram, but this does not, I think, have any particular significance, nor do the breaths heard represent the overall breath pattern. There must, for instance, have been a much larger breath at the end of stanza 1, but it is not heard because the speaker has time to take it at leisure--2.2 seconds.

POEM "C"

dying is fine)but Death	1
?o	2
baby	3
1	4
wouldn't like	5
Death if Death	6
were	7
good:for	8
when(instead of stopping to think)you	9
begin to feel of it,dying	10
's miraculous	11
why?be	12
cause dying is	13
perfectly natural;perfectly	14
putting	15
it mildly lively(but	16
Death	17
is strictly	18
scientific	19
& artificial &	20
evil & legal)	21
we thank thee	22
god	23
almighty for dying	24
(forgive us,o life!the sin of Death ³⁴	25

VOICE GRAPH: POEM "C"
 E.E. Cummings reading "dying is fine)but Death"



Cummings as the "draughtsman of poems" has drawn this poem on the page after his deliberate fashion. But he has also chosen to read it aloud and the challenge is, I think, to bring the voice and the picture together as a clue to the significance of the line arrangement for other readers.

1) Punctuation marks

The voice graph shows breaks in voice sound related to punctuation marks as follows:

)	line 1 followed by 1.2 seconds of quiet
?	line 2 preceded by 1.3 seconds of quiet
:	line 8 followed by 1.6 seconds of quiet
()	line 9 preceded by .4 seconds of quiet
	followed by 1.2 seconds of quiet
,	line 10 followed by 1.6 seconds of quiet
?	line 12 followed by .6 seconds of quiet
;	line 14 followed by .2 seconds of quiet
(line 16 followed by 1.3 seconds of quiet
)	line 20 followed by 4.2 seconds of quiet
,	line 25 followed by .7 seconds of quiet
!	line 25 followed by 1.2 seconds of quiet

From which one can say that punctuation here is the principle guide for reading.

2) Pauses at line ends

line 1	<u>1.3</u> seconds
2	
3	<u>.1</u>
4	
5	
6	<u>.4</u>
7	
8	
9	
10	
11	<u>.3</u>
12	
13	<u>.2</u>
14	
15	

16	
<u>17</u>	<u>.8</u>
<u>18</u>	<u>.2</u>
19	
20	
<u>21</u>	<u>4.2</u>
22	
23	
<u>24</u>	<u>4.2</u>
25	

One can say, therefore, that there are sizable stretches of quiet at lines 1, 21 and 24, and minor breaks at line-ends 3,6, 11, 13 and 17. Meanwhile, there are, within the lines, breaks at punctuation marks in lines 1, 8, 9, 10, 14, 16, 22, 24 and 25. In spite of the difficulty of putting a finger on it, there is, I think, a subtle rhythm to this poem. It is brought about--partly at any rate--by the line-end signals working against the straight-forward, almost prose pattern of the clauses.

I have divided the voice graph up according to what seemed to me to be the most significant pauses. The phrase diagram, on the other hand, is laid out according to the verse lines. It is easy to see that there are many well-defined clauses and in many places there does not seem to be much question as to where the primary stress falls. However, there are 15 line-ends with no observable pause at all. For these, I must postulate the line-end /+ / juncture and consider the effect. Principally, I think it is to make secondary

stress possible on the word beginning the next line,
such as:

line 4	<u>i</u>
line 5	<u>wouldn't</u>
line 10	<u>begin</u>

but also the line-end is working to signal that "hair of time suspended" that will break up the otherwise possibly prosaic effect.

What Cummings' perhaps over-subtle ear is, I think, after is the syncopation pattern heard in music where two contrary rhythm patterns--perhaps two beats against three--go along against each other. There is always the feeling that the contrary beats will come together eventually and when they do, it is with a feeling of a resolution. In this poem, the lines and the phrases pull against one another until miraculous in line 11 where there is a Disc juncture with a short pause which together produce a moment of resolution. Then the contrary rhythms are off again and the real resolution and climax comes at legal at the end of line 21. After this climax, the remaining four lines operate as a sort of coda which ends tidily with a full close on Death.

CHAPTER VI
 THE VERSE OF
 E.E. CUMMINGS.

N O T E S

- 1 John Arthos, "The poetry of E.E. Cummings," American Literature, p. 383.
- 2 S. A. Jacobs, letter to the Sunday World in 1928, quoted in Charles Norman, The Magic Maker (NY., 1958), p. 170.
- 3 E. E. Cummings, CIOPW (NY., 1931), quoted in Charles Norman, The Magic Maker (see note 2, above)
- 4 One might say that Cummings' visual poems convey visual metaphors, so that by printing a fractured suggestion of a word, he gives it a potency that the common meaning has lost.
- 5 E. E. Cummings, New Poems, #9, Poems 1923-1954 (NY 1958), p.338.
- 6 - no thanks, #59, - - p.318.
- 7 When Cummings reads ten of his sonnets at Harvard he says, "let them sing for themselves," and when he reads his 'springtime celebrations', he says ". . . if these celebrations don't sing (instead of speaking) for themselves, please blame me; not them. six nonlectures (Atheneum ed., 1962), p. 35.
- 8 E. E. Cummings, "Foreword," IS 5 (1926), Poems 1923-1954, p.163.
- 9 - IS 5, #VI, Poems 1923-1954, p. 170
- 10 - ViVa, #X - p.230.
- 11 Harvey Gross, Sound and Form in Modern Poetry (Ann Arbor, 1965), p.122.
- 12 E.E. Cummings, letter to C.A. Pearce, July 13, 1937, quoted in Charles Norman, The Magic Maker (note 2, above), p.312
- 13 P. Lieberman, "On the Acoustic Basis of the Perception of Intonation by Linguists," Word 21.54, #1, (April 1965).
- 14 E. E. Cummings, Xaipe #64, Poems 1923-1954, p. 463
- 15 - Xaipe #5 - p. 431
- 16 The nature of 'grammaticalness' and degrees of grammaticalness have been much discussed. I do not intend to go into this, However; see Chomsky, Aspects of the theory of Syntax, note 2, to Chapter 4, p. 227.

- 17 E. E. Cummings, six nonlectures (Atheneum ed., 1962), p.43.
- 18 - - p. 50.
- 19 - - p. 31.
- 20 Otto Jespersen, "Negation in English and other languages,"
Selected Writings (London & Tokyo), p. 139
- 21 W. Shakespeare, Venus and Adonis, line 903
- 22 E. E. Cummings, 1 x 1, #6, Poems 1923-1954, p. 392.
- 23 - - #XVI - p. 398.
- 24 Noam Chomsky, Aspects of the Theory of Syntax (MIT press, 1965)
p. 148.
- W. O. Dingwall, "Recent Developments in Transformational
Generative Grammar," Lingua, XVI.307, #3 (1966)
- 25 E. E. Cummings, "Introduction," IS 5, (1926), Poems 1923-1954,
p. 163
- 26 - CIOPW, quoted in Charles Norman, The Magic Maker
(note 3, above), p.263
- 27 Noam Chomsky, Aspects (note 24, above), #2.3.3, p. 84-106.
- 28 W. O. Dingwall (note 24, above), p. 305.
- 29 E. E. Cummings, ViVa, #LXXX, line 3, Poems 1923-1954, p. 271
- 30 - Fifty Poems, #49, line 1, - p.385
- 31 - - - line 13 -
- 32 - XXaipe, #41, line 3 - p. 451
- 33 - - #66, lines 12 and 24, - p.464
- 34 POEM "A" : E.E. Cummings, 1x1, #LII, Poems 1923-1945, p.421
- POEM "B" : - 1x1, #LI - p. 420
- POEM "C" - Xaipe, #6 - p. 431
- 35 E.E. Cummings, six nonlectures (note 17, above).

CHAPTER VII

POEMS BY SIMON FRASER UNIVERSITY POETS

This final chapter considers three examples of verse by poets at Simon Fraser University. The approach is basically as it was for the three Cummings poems. The poet's own reading is taken to be the authentic evidence of the way the poem is intended to sound. The poets read into a microphone and the reading was recorded on tape and on graph. The tape recording accompanies and forms part of this thesis, and the graph recording is included in the text.

In two ways, however, the approach to the living poets differs from the approach to Cummings:

- 1) respiration during reading was recorded by means of a graph of chest movements.
- 2) a first analysis of the poems was made purely from the sound of the voice and

the two graphs, with no record of how the poems were to appear in print.

Graph Recordings

Voice: The oscillations of the upper line on the graph reflect, as they did for Cummings, the noise disturbance caused by the voice. The patterning is of relative noise against relative quiet and it would be a mistake to look for finer divisions. In the 'quiet' sections, the needle shows a good deal of movement which represents the noise of the air-conditioner in the room where the recordings were made.

It was possible also to mark a maximum height of breath intake and a minimum low point which gives something in the nature of the breath potential for each reading.*

	Difference between breath maximum and breath minimum
D.H. Sullivan	13 squares
R. Blaser	9 squares
L. Kearns	12 squares

Analysis by Sound: Comparison of Graphs

Breath groups

In comparing the three graphs, it is very evident that the breathing patterns of the three poets

* all measurements are approximate to the nearest square of the calibration of the paper.

are quite different. The points at which sizable breaths were taken show clearly on all graphs, coincide with periods of voice quiet and offer good points of division on which to base a preliminary analysis which could later be compared with the phrase diagram. These preliminary breath group analyses are to be found later in the discussion of the individual poems and are brought together for the sake of comparison in the following table.

COMPARISON OF POEMS BY BREATH GROUP DIVISIONS

	Breath group no.	Duration of voice	Duration of quiet	Breath intake amount x time
D. H. Sullivan "apology to a dead god"	-	-	-	8 x 11
	1	2.5 sec	.6	2 x 3
	2	2.4	.7	1 x 7
	3	2.6	.8	7 x 6
	4	1.3	.7	6 x 6
	5	2.6	.4	3 x 3
	6	2.2	.5	4 x 3
	7	.7	.4	5 x 3
	8	1.3	.7	5 x 4
	9	2.7	.9	5 x 4
10	2.4		10 x 18	
R. Blaser section from "The Moth Poem"	-	-	-	5 x 5
	1	2.2	.6	3 x 3
	2	3.0	.7	3 x 4
	3	4.3	.4	4 x 4
	4	.6	.5	4 x 5
	5	2.3	.8	5 x 6
	6	3.1	.3	3 x 3
	7	1.9	.9	2 x 6
	8	1.5	.4	4 x 4
	9	4.4	.6	3 x 5
	10	1.2	.5	3 x 4
	11	2.1	.7	3 x 6
	12	1.0	.1	2 x 2
	13	.9	.5	3 x 4
	14	2.4	.4	3 x 4
	15	1.0	.6	3 x 5
	16	2.7	.4	4 x 4
	17	2.6	.5	3 x 3
18	1.8	-	-	
L. Kearns "Ambergris"	-	-	-	8 x 5
	1	5.6	.9	6 x 7
	2	7.3	.9	9 x 9
	3	9.2	1.2	12 x 9
	4	9.1	.7	6 x 8
5	8.0	-	-	

All three readers, obviously, took breath before they began. D.H. Sullivan took a large breath (10 x 18) immediately after finishing. L. Kearns' graph showed continued expiration for the 2-3 seconds after the reading had ended. R. Blaser's breath curve resumed an even fluctuation, which I take to be his normal pattern of breathing at rest, in one second after the voice had stopped. The maximum duration for voice was 2.6 seconds for D.H. Sullivan, 4.4 seconds for R. Blaser, but L. Kearns was able to carry 9.2 seconds of speaking on a 9 x 9 breath and 9.1 seconds on the next 12 x 9 breath. After the 8 seconds of voice duration which ended the poem, Kearns still did not need to take breath during the 2 or 3 seconds for which the recording continued after the end of the reading.

Phrases within the breath group

In all three poems, the voice graph shows intervals of quiet within the breath group. (Obviously, there are also stretches of quiet that coincide with the intakes of breath that form the breath groups.) All the quiet stretches were taken to represent junctures of one sort or another, and used to mark off the phrase groups in making the phrase diagram for each poem. This is the same type of diagram as that that was developed for Pippa's Song in Chapter V, page 106,

that was used in the analysis of the Cummings poems in Chapter VI, and that represents the end product of the poet's supposed generation of the poem from syllables, through phrases to the line.

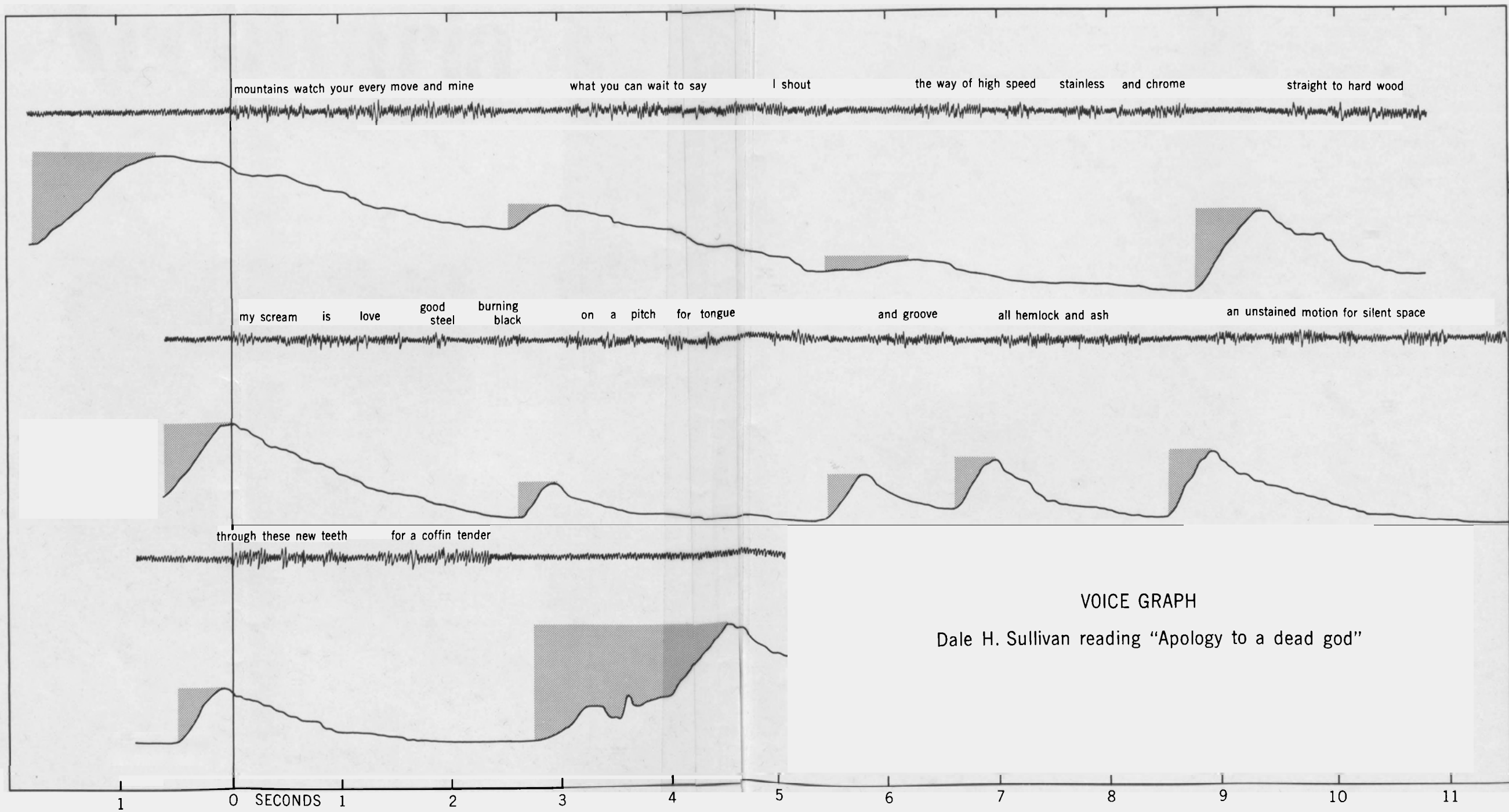
D.H. SULLIVAN:

apology to a dead god

mountains watch your every move and mine	1
what you can wait to say--I shout,	2
the way of high-speed stainless	3
and chrome, straight	4
to hard wood,	5
my scream	6
is love	7
good steel	8
burning black	9
on a pitch for tongue	10
and groove, all hemlock and ash	11
an unstained motion for silent space	12
through these new teeth for a coffin-tender	13

ANALYSIS ACCORDING TO BREATH GROUP

Breath group		Time of voice	Time of quiet	Breath
1	mountains watch your every move and mine	2.5	.6	8 x 11 2 x 3
2	what you can wait to say /--/ I shout	2.4	.7	1 x 7
3	the way of high speed /-/ stainless /-/and chrome	2.6	.8	7 x 6
4	straight to hard wood	1.3	.7	6 x 6
5	my scream is love /-/ good steel /--/ burning black	2.6	.4	3 x 3
6	on a pitch for tongue	2.2	.5	4 x 3
7	and groove	.7	.4	5 x 3
8	all hemlock and ash	1.3	.7	5 x 4
9	an unstained motion for silent space	2.7	.9	5 x 4
10	through these new teeth /---/ for a coffin tender	2.4	-	10 x 18



D.H. Sullivan: apology to a dead god

#1 on tape

I Verse Line in Relation to Breath

From a comparison of the analysis of this poem by breath group with the line arrangement of the poem as typed, it seems that breath is not part of the structure of the poem. For instance, there is a pause of .8 seconds during which the voice is quiet and during which a breath of 7 x 6 is taken, in the middle of line 4. There is also a similar pause of .7 seconds with a 5 x 4 breath in line 11. However, breaths and line-ends fall together for lines 1, 2, 5, 9, 11 and 12.

II Verse Line in Relation to Juncture

My reconstruction of the poem from hearing was as follows:

mountains watch your every move and mine	1
what you can't wait to say I shout	2
the way of highspeed stainless & chrome	3
straight to hard wood	4
my scream is love good steel burning black	5
on a pitch for tongue	6
and groove	7
all hemlock and ash	8
and unstained motion for silence space	9
through these new teeth for a coffin tender	10

PHRASE DIAGRAM

S = stress
2..4 = pitch contour

D. H. Sullivan : 'apology to a dead god'

↓↑ = Cont. jct.
↓ = Disc. jct.

8 x 11	moun 2 s	tains s	watch s	your s	ev s	ry s	move s	and s	mine 3 S	↓	2 x 3 breath
2	what s	you s	can s	wait s	to s	say S ⁴	↓	I s	shout S ⁴	↓	1 x 7
3	the s	WAY s	of s	high s	speed 4 S	↓	stain 3 S	less 2 s	↑		
4	and s	chrome 4 S	↑	7 x 6	straight 3 S	↓					
5	2 to s	hard s	wood 4 S	↓	6 x 6						
6	2 my s	scream 4 S	↓								
7	2 is s	love 4 S	↓								
8	2 good s	steel 4 S	↓								
9	2 burn s	ing s	black 4 S	↓	3 x 3						
10	2 on s	a s	pitch s	for s	tong- ue 4 S	↓	4 x 3				
11	2 and s	groove 4 S	↓	5 x 3	all 2 s	hem s	lock s	and s	ash 3 S	↓	5 x 4
12	2 an s	un s	stain'd s	mo s	tion s	for s	si s	lent s	space 4 S	↓	5 x 4
13	2 thru s	these s	new s	teeth 4 S	↓	for s	a s	cof 4 S	fin s	ten s	der 1 s

The line arrangement differs a good deal from the authentic typescript submitted later by the poet.

My visual interpretation has 10 lines against the poet's 13, and agrees completely only in lines 1 and 2, 12 and 13 (my 9 and 10). In all the intervening lines (3 to 11, my 3 to 8), I was mistaken in the way I heard the phrase patterning. For instance:

the way of high-speed stainless and chrome (lines 3 & 4)
and

straight to hard wood (lines 4 & 5)

I took to be unbroken, whereas there are line-ends after stainless and straight. There is very little in the way of reduced activity to be seen anywhere on the voice graph between the way and chrome, but there is both quiet and a 7 x 6 breath after chrome. There is the same difficulty for the line-end after straight, though there is a 6 x 6 breath and a Disc. juncture after hard wood. It is even harder to find any sort of a quiet area to establish the line-end after scream, although here the line-end function is more evident. My visual version which runs

my scream is love

together (which I thought I heard) is obviously wrong. As a unified phrase, the primary stress would be assigned to love (see Chapter II, note 29 to page for cyclic stress assignment rules), while scream would get secondary stress. By setting the lines on the page in the way

he has, the poet uses the line-ends to signal a juncture so that a reader visually picks up the pattern

my	scream
2	S 4
is	love
2	S 4
good	steel
2	S 4

with ascending patterns of pitch for each line.

This observation puts line-end juncture in something of a new light and will be referred to in the concluding section of this paper. It also helps to explain the set-up of lines 3, 4, and 5, though the long pause and the breath in the middle of line 4 is still hard to accommodate. There is a similar break--though not so big--in line 11.

In line 12, I misheard the word silent which gave me a mistaken idea of the syntax so that I took the apparently quiet section on the voice graph towards the end of this line to be a juncture. (Ideas of underlying phrase structure influencing perception!) I heard silence, so the line had to be divided into two phrases.* Sullivan's idiolect has the characteristic that he does not release /t/ in final position so that

* for silence in this line, the underlying structure would have to be:

is an unstained moment for silence
 is an unstained moment for space
 ==> is an unstained moment for⁴silence ↑⁴ space.

silent space was realised /sailen+spes/. But in forming his /t/, the air is stopped so that there is a period of quiet, and this, I think, is what shows on the graph and is what I mistook for a juncture between the two phrases that I supposed to be there. The same thing happens in a different way in the break between lines 4 and 5, though here the final /t/ of straight is released so as to permit the production of the initial /t/ of to. This phonetic activity produces the required juncture (which I failed to hear on account, probably, of having jumped to syntactic conclusions), and gives a small but recognisable quiet spot on the voice graph.

III Syllables

The number of syllables per line follows the visual pattern and there is no apparent correspondence between syllable count and breath group.

IV Stress

The poem, as heard, has no notable stress or pitch pattern. With the alignment before one, however, the phrase pattern is clear and from the phrase diagram (see page 153), one can see that the stress falls on the last syllable of the phrase everywhere except in stainless of line 3. I have marked syllables as stressed (S on the diagram) with a certain amount of

definiteness which comes less from the fact that I could perceive which was the stressed syllable--which I could not--than from the fact that once the phrase division is made, which of the syllables is likely to be the stressed syllable of the phonemic clause is not too hard to determine. Pitch is sometimes an indication, and if there is real doubt, the stress assignment can be worked out from the cyclic rules. The only places in this poem where I had doubts about the stress were in line 12 where there might have been two phrases

4 3 2 4
 an unstained mótion ↓ fór silent spáce

or

4
 an unstained motion for silent spáce

and in the line 3, which I referred to above.

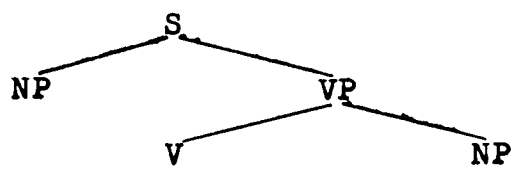
V Syntax and Language

Although the reading of this poem is unmistakably broken by junctures, the underlying phrase structure has been so much transformed that the phrase organization from a syntactical point of view is hard to come by, and the following analysis can only be conjectural:

Lines 2, 3 and 4 come, I suggest, from the underlying sentences:

you can wait to say . . . something

I shout . . . something



shout

something -----> (the way of high speed
 (stainless and chrome
 (straight to hardwood

In lines 5, 6, 7, 8 and 9, each phrase is some form of the predicate of be with the first phrase of the last line acting as a locative adverbial.

In the entire poem, only four verbs function in S --> NP + VP patterns:

- watch line 1
- can wait line 2
- shout line 2
- is line 5

Structure: aural and visual

It is difficult to connect this poem as heard with the poem on the page. It is almost as if there were two separate entities. This is an instance of the visual presentation being essential to the poetic. That is to say, the full impact of the poem depends on its being seen. This poem is also an example of the poet's reading not being the final word on the verse structure because it is structured for any number

of personal readings. The voice, for instance, adds nothing to the double play of the words that are familiar in British Columbia as part of the language of the woods and of building. If the ambiguities had been syntactical, the poet's reading would have influenced the interpretation, but as it is more a matter of lexical ambiguity, what the reader sees or hears is as much to the point as what the poet sees or hears.

ROBIN BLASER:

Section from

The Moth Poem

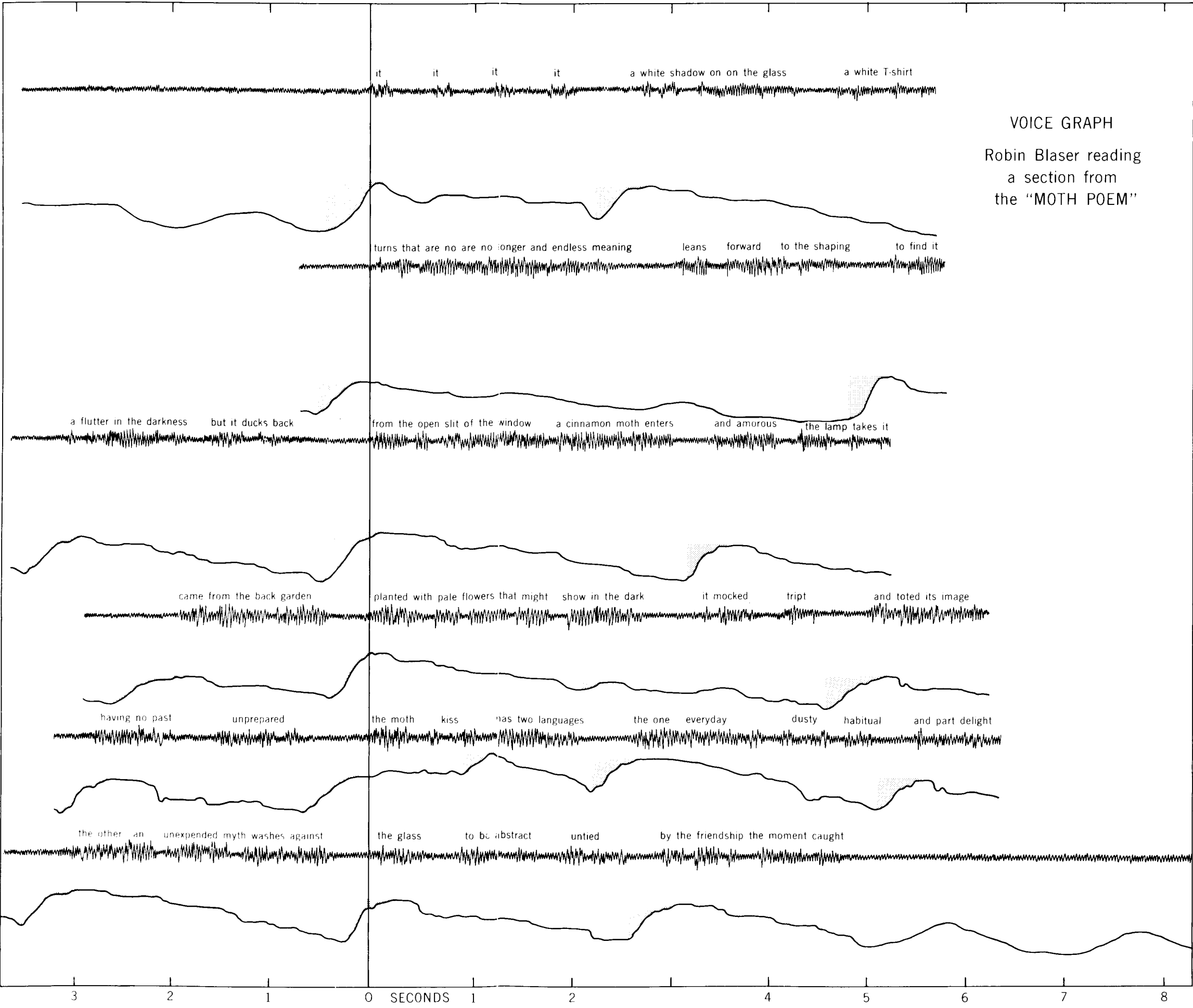
it it it it	1
a white shadow there on the glass	2
the white T-shirt turns that	3
are no longer an end	4
less meaning leans forward to the	5
shaping, to find it, a flutter of the	6
darkness, but it ducks back	7
from the open slit of the window,	8
a cinnamon moth enters	9
and amorous, the lamp takes	10
it came from the back	11
garden planted with pale flowers	12
that might show in the dark it	13
mocked, tripped, then toted its	14
image, having no past, unprepared	15
the <u>moth-kiss</u> has two languages,	16
the one everyday, dusty, habitual,	17
and part delight, the other	18
an <u>unexpended myth</u> washes against	19
the glass, to be abstract, untied	20
by the friendship, the moment caught	21

ROBIN BLASER :: Section from The Moth Poem
#2 on tape.

ANALYSIS ACCORDING TO BREATH GROUP	Voice	Quiet	Breath
it/---it/---it/---it	2.2	.6	5 x 5 3 x 3
a white shadow on the glass/----the white T Shirt	3.0	.7	3 x 4
turns/-that are no longer an endless meaning/----- leans forward to the shaping	4.3	.4	4 x 4
to find it	.6	.5	4 x 5
a flutter of the darkness/--but it ducks back	2.3	.8	5 x 6
from the open slit/-/of the window/-/ a cinnamon moth enters	3.1	.3	3 x 3
and amorous/--the lamp takes it	2.4	.9	2 x 6
came from the back garden	1.5	.4	4 x 4
planted with pale flowers that might show in the dark/-----/it mocked/---/tripped	4.4	.6	3 x 5
then toted its image	1.2	.5	3 x 4
having no past/--/unprepared	2.1	.7	3 x 6
the moth/--/kiss	1.0	.1	2 x 2
has two languages	.9	.5	3 x 4
the one every day/-/dusty/-/habitual	2.4	.4	3 x 4
and part delight	1.0	.6	3 x 5
the other an unexpended myth/-/ washes against	2.7	.5	4 x 4
the glass/---/to be/-/abstract/-/untied	2.6	.4	3 x 3
by the friendship/-/the moment caught	1.8	-	-

VOICE GRAPH

Robin Blaser reading
a section from
the "MOTH POEM"



R. Blaser: Section from The Moth Poem

I Verse Line in Relation to Breath

The breath pattern was one of the most immediately striking things about the graph of this reading. At first sight, the whole pattern seemed more regular than the others: there was a smaller span between maximum and minimum, the size of the intake varied only between 2 and 5 squares, with the most breaths at about ± 3 squares. That is to say, in 9 out of the 17 breaths recorded during the reading of the poem, the curve for respiration rose 3 squares on the graph. The average number of squares for breath intake was $3.5/17$. One could see at once that this was a different breath pattern from Kearns' few big breaths and Sullivan's variable intakes. Blaser took most of his breaths toward the centre of the span, only reaching maximum in breath-groups 13 and 14, and minimum at the end of breath-group 3 (4.3 seconds) which has a long internal pause, although for breath-group 9 which has the longest duration (4.4) and has two internal pauses, the breath is held in the middle of the span. There is an overall impression of control, or natural connection between the breath and the speech. This is the only graph that gives any indication of the chest movement while speech is not going on. Before the reading of the poems, the apparatus was tested against reading

other matter, and on each graph, there is an interval of several seconds when the voice was at rest both before and after the reading of the poem. Sullivan asks a question just before he draws breath to begin and immediately after the last word, he again draws breath which he exhales during the next 3 or 4 seconds, so for him, there is nothing to represent respiration at rest. Kearns, for whom a lot of experimental reading is recorded, does show something a little like a curve just before he takes the breath to start the poem and again at the end, there is a suggestion of a curve shaping up before the apparatus was out off. For Blaser, on the other hand, as soon as the poem is finished, the respiration graph shows the beginnings of a regular sine-type curve with a span of three squares between low point and high point. Interestingly, there is a comparable pattern in the seconds before breath is taken to begin the reading. Breath is held at the maximum point for the rest curve, then, briefly respiration takes up, for a couple of seconds, a reduced version of the final rest curve after which breath is taken and the poem begins.

II Verse Line in Relation to Juncture

The breath pattern sets up the ends of lines 1, 7, 9, 15, 16, 17, 19, 20 as having definite junctures of which three are discontinuous. There are 5 Disc

PHRASE DIAGRAM

R. Blaser

Section of the "Moth Poem"

it 4 S	→	it 4 S	→	it 4 S	→	it 4 S	↓	(breath 3x4)	1											
a 2 s		whi s		shad s		ow s		on s	the glass 4 S	↓	.3	2								
the s		white s		T- S		shirt 2 s	↑	3x4	turns 3 s	+	.1	3								
are 2 s		no s		long 4 S		er s		an s	end s	+	.1	4								
less s		mean S		ing 4 S	↓	leans 1 s	↓	for 2 s	ward 3 s	to s	the 2 s	+	5							
shap 4 S		ing 2 s	↑	4x3		to s		find 4 S	it 2 s	↓	4x5	a s	flut 3 s	ter s	of the s	+	6			
dark 4 S		ness 3 s	↓	2		but s		it s	ducks 4 S	back 1 s	↓	4x5	.8	7						
from s		the s		op s		en s		slit s	of s	the s	win 4 S	dow 2 s	→	.1	8					
a s		sin 3 s		na s		mon s		moth 3 S	en s	ters 4 s	↓	.3	3x3	9						
and s		am S		rons 4 s	↓	the s		lamp S	takes 4 s	+	.1	10								
it s	↓	3x7		came 4 S		from s		the s	back s	+	.9	11								
gar 4 S		den 3 s	↑	4x4		plan 4 s		ted s	with s	pale s	flowers 3 S	+	12							
that s		might s		show s		in s		the s	dark 4 S	↓	.6	it 2 s	+	13						
mokt 4 S	→	tript 4 S	↓	3x6		then 2 s		tot 4 S	ed s	its s	+	.6	14							
im 3 s		age 2 s	↑	3x4		hav 3 s		ing s	no 4 S	past 2 s	↑	.4	un 3 s	pre s	pared 4 s	1	3x5	↓	15	
ne s		moth 4 S	→	4		kiss 4 S	↓	2x2	has 2 s	two s	lan 4 S	gua s	ges 3 s	↓	.5	3x4	16			
the s		one s		ev 3 s		ry s		day 4 S	→	dust 3b s	y 4 s	↓	hab 2 s	it 4 S	ual s	2	3x4	↓	.4	17
and s		part 4 S		de 2 s		light 4 S	↓	4x5	the s	oth 4 S	er 3 s	→	.1	18						
an 2 s		un s		ex s		pen s		ded s	myth 4 S	↓	.1	wash 2 s	es s	a s	gainst 3 S	↓	.4	4x4	19	
the 2 s		glass 4 S	↓	1		to 2 s		be s	ab s	stract 4 S	↓	.1	un 2 s	tied 4 S	↓	.4	2x3	20		
by s		the s		friend 4 S		ship 3 s	↓	.1	the s	mo s	ment s	caught 4 S	1	↓	21					

junctions within graphic lines. The Disc juncture in line 5 involves a quiet period of .6 seconds during which there is only a small sneaked breath. There are other mid-breath junctures, but they are Continuous and, except for line 14, do not involve so long a pause.

The first line of the poem is a series of monosyllabic phrases with the same interval of time between each of them. Here the pitch level is the same for each phrase so one can assume that the morphophonemic rule producing a terminal sustain has been applied.

Junctures within the lines and the breath groups represent the phrase patterning determined by the underlying structure. That is to say, for each phrase marked off, both by periods of quiet and by intonation pattern, the underlying phrase structure is recoverable.

Line 9

A transformation to give inversion leaves junctures within the line: i.e., one might suppose that:

a cinnamon moth enters from the open slit
of the window

====>

from the open slit of the window---> a cinnamon moth enters

Line 10

The junctures in this line are set up by

the linguistic demands of the juncture division (which he knows as part of his language competence), he exercises all the choices available to him in the selection of pitch contours within the phrase.* My pitch numbers on the phrase diagram are therefore impressionistic in that I have occasionally no theoretical support for my perceptual choices. The movement is often carried, it seems, by a rise in pitch at the end of the phrase followed by a Cont juncture, and high pitch often appears to be located on syllables not bearing primary stress.

III Syllables

The number of syllables per line has, it seems, no significant connection with the movement of the poem, although the graphic lines do not vary greatly in length. Acoustic properties of the syllables feature, in that all the breath-groups that end with a Disc juncture are preceded by syllables closed with stops.

- /t/ - four times
- /d/ - once
- /k/ - once

* Stockwell, it will be remembered, divided his IP into C and JP. IP ---> C + JP. In this connection, he says: "It is necessary to divide IP into Contour and Juncture Point because whereas the C can be relocated by a variety of transformations, the end point of the C remains unchanged by such relocations. This end point is marked by JP, which is an entity set up to locate the end of a morpheme C which is spread through the preceding string."

IV Stress

Except for the repeated stress in line 1, there is no metronymic function of stress in this poem. The primaries are determined by the junctures, and in most cases, there is not much doubt where they fall. Most breath-groups have 2 stresses, and of the graphic lines, nine have 2 stresses and nine have 1.

A more interesting stress pattern is found in a type of NP that I find is often realised in a characteristic way by contemporary poets. The examples here are:

T+shirt
 friend+ship
 dark+ness
 shaping

These tend to be realised as if they were all compounds (as T-shirt is) to which the first of the two cyclic rules for stress assignment had been applied to give primary stress to the first syllable and secondary stress to the second (see page 37, Chapter II). In normal speech and in the middle of a phrase, the stress on the second syllable of friendship, darkness and shaping might easily be reduced to tertiary or even unstressed, but in this poem, these words are all placed immediately before a juncture, the pitch is held up and the stress is held up too: to the secondary for which the /+ / provides.

of this poem have, I think, two separate existences. The poem exists, it seems to me, principally in its audible shape, and so perhaps represents the contemporary situation that I mentioned in Chapter III, of the poet writing for a listening audience. However, in reading the poem from the page, the syntax and the function of the juncture breaks is, I think, clear enough to signal an appropriate reading. The fact that lines end in mid-phrase, as do lines 3, 4, 5, 10, 11, 12, 13 and 14, represents, I think, internal junctures of the most minimal sort

LIONEL KEARNS: Ambergris: A Statement on Source

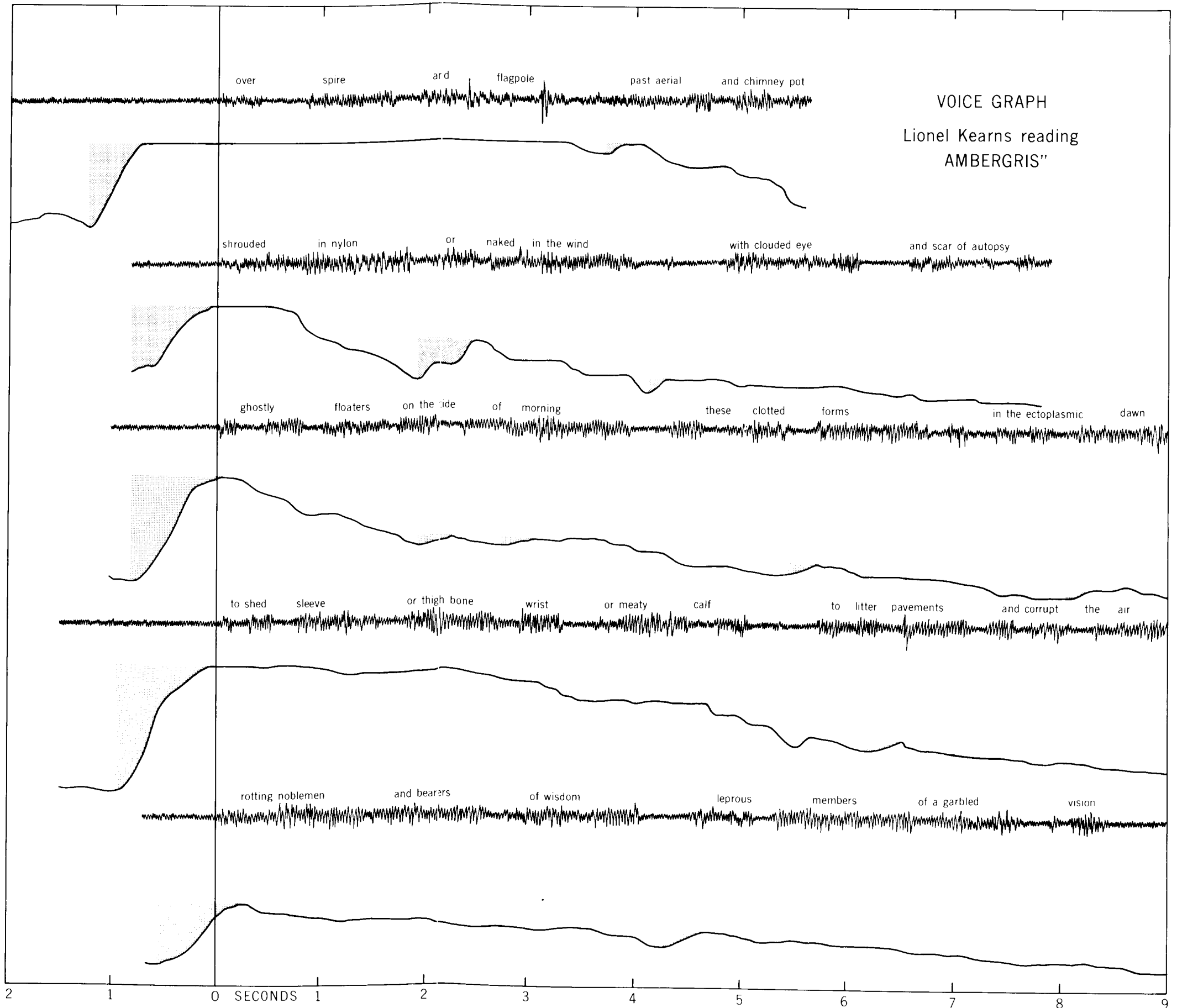
Over spire	1
and flag-pole	2
Past aerial	3
and chimney-pot	4
Shrouded	5
in nylon	6
Or naked	7
in the wind	8
With clouded eye	9
and scar of autopsy---	10
Ghostly	11
floaters	12
on the tide	13
of morning	14
These clotted forms	15
in the ectoplasmic	16
dawn	17
To shed sleeve	18
or thigh-bone	19
Wrist	20
or meaty calf	21
To litter pavements	22
and corrupt the air	23
Rotting noblemen	24
and bearers	25
of wisdom	26
Leprous members	27
of a garbled	28

L. Kearns: Ambergris: A Statement on Source
#3 on tape

ANALYSIS ACCORDING TO BREATH GROUP

		Voice	Quiet	Breath
1.	over/---/spire/--/and flagpole /-/past aerial and chimney-pot	5.6	.9	6 x 7
2.	shrouded in nylon/-/or/-/naked in the wind/-----/with clouded eye/----/and scar of /-/ autopsy	7.3	.9	9 x 9
3.	ghostly floaters on the tide of morning/--/these clotted forms /-/in the ectoplasmic dawn	9.2	1.2	12 x 9
4.	to shed/--/sleeve/-/or thighbone /-/wrist/--/or meaty calf/-----/ to litter pavements/-/and corrupt /-/the air	9.1	.7	6 x 8
5.	rotting noblemen and bearers of wisdom/----/leprous/--/members of a garbled/---/vision	8.0	-	-

VOICE GRAPH
Lionel Kearns reading
"AMBERGRIS"



L. Kearns: Ambergris: A Statement on Source

I Verse Line in Relation to Breath

From the analysis by breath group, one can see that there is a connection between breath and stanza. Breaths are taken at the ends of the lines that terminate the stanzas as set out on the page. In addition, there is a 6 x 7 breath after line 4, and a 3 x 5 breath after line 6. Within lines 3, 13, 14, 15 and 16, there are small upturns of the respiration curve which seem to represent snatched breaths. This reader takes the deepest breaths of the three poets and produces the longest breath group of speech. The impression is that he breathes for reading in the manner of a singer; builds up sufficient pressure to carry the stretch of speech he sees coming. The small breaths do not appear to connect with the lines, but are taken, I think, to keep the air pressure up for the purpose in hand.

II Verse Line in Relation to Juncture

Lionel Kearns, in this poem, is using the visual technique which he has called "stacked verse" in which each line represents a phonemic clause and the stressed syllable of each line is printed in such a position that it comes immediately below the

PHRASE DIAGRAM

Lionel Kearns : AMBERGRIS: A STATEMENT ON SOURCE

1	8 x 5	o	ver	spire 4 S	↓					
2			and	flag 4 S	↑	pole 2				
3			past 3	aer 4 S		i	al 2	+		
4			and	chim 4 S		ney	pot 4	↓	6 x 7	
5				shrou 4 S		ded 2	+			
6			in	ny 4 S	↓	lon 3		3 x 5		
7			or 2	nak 4 S		ed	+			
8		in 2	the 3	wind 4 S	↓					
9			with	cloud 4 S		ed	eye 3	↓		
10			and 2	scar 4 S		of	aut	op 3	sy 1	↓ 9 x 9
11				ghost 4 S		ly 2	↑			
12				float 4 S		ers 3	↑			
13		on 2	the	tide 4 S	↑					
14			of 2	morn 4 S		ing 2	↑			
15	these 3	clot	ted	forms 4 S	↓					
16		in 3	the	ect 4 S		o	plas mic 2	↑		
17				dawn 4 S	↓		9 x 9			
18		to	shed	sleeve 4 S	↓					
19			or	thigh 4 S		bone 2	↑			
20				wrist 4 S	↓					
21	or 2	meat 4	y	calf 4 S	↓					
22	to 2	lit	ter	pave 4 S		ments 3	↓			
23		and 2	cor	rupt 4 S		the	air 3 s	↓	6 x 8	
24				rot 4 S		ting	nob le		men 2	+
25			and 3	bear 4 S		ers 3	↓			
26			of 2	wis 4 S		dom 1	↓	1 x 4		
27		lep 4	rous	mem 4 S		bers 3	↓			
28		of	a	gar 4 S		bled 2	↑			
29				vis 4 S		ion 1	↓			

stressed syllable of the previous line and is connected to it by a vertical line.¹ This poem, therefore, gives a special kind of opportunity to observe the connection between the printed line-end and juncture.

From the voice graph, one can see periods of reduced activity--periods of quiet--at the ends of most lines of the poem. There are some places, however, where there is nothing on the voice graph to indicate that a line has ended. There are three points to be considered here:

- 1) that Kearns in his definition of 'stacked verse' set the line up to be a phonemic clause so that a juncture at the end is implied.
- 2) that the voice graph is no more than a crude representation of noise: the most one can pick up from it are the pauses that are sufficiently prolonged to be recognizable in the recording.
- 3) that only Disc junctures are necessarily followed by a pause in sound. That is to say, Disc in Stockwell terminology represents terminal fade (into silence) in Trager-Smith terminology and that their terminal rise and terminal sustain are contained in Stockwell's Cont junctures. In speech, Cont junctures are often reinforced by pauses, it is true, but they need not be. Trager-Smith insist that

there must be "positive segmentation points of sustention,"² but these would not show up on the type of graphic record we have here. Without a pause, the IP morpheme would depend on the pitch contour of the phrase and the relative pitch connection between the end of one phrase and the beginning of the next.

In listening for these in Kearns' reading, one should, I think, bear in mind the passage quoted on page 27 of Chapter II above in which Chomsky speaks of the combination of physical signals by which one 'hears' the phonological grammar of a language. My interpretation of the line pattern was as follows:

 over spire and flagpole
past aerial and chimney-pot
 shrouded in nylon
 or naked in the wind
 with clouded eye
 and soar of autopsy

* * * *

ghostly floaters on the tide of morning
these clotted forms in the ectoplasmic dawn

 to shed sleeve
 orthighbone
 wrist
 or meaty calf
to litter pavements
 corrupt the air

* * * *

rotting noblemen and bearers of wisdom
 leprous
 members of a garbled
 vision.

With only sound and the graph to go on, I 'heard' lines 5 and 6 as one line, also lines 7 and 8, 24 and 25, 27 and 28. That is to say, in these four cases, I did not pick up the presence of a juncture either from physical evidence or from the phrase structure, but Kearns' principle of stacked verse says junctures are there. To consider these cases individually:

Lines 5 and 6: There is no underlying phrase structure to separate these lines, there is no pause. If the juncture is indicated at all, it is by pitch contour.

Lines 7 and 8: The same applies here with the added possibility of the preposition phrase in the wind carrying a juncture before it.

Lines 24 and 25: Here there is a 'recoverable' underlying PS which would indicate a juncture although the graph shows nothing.

rotting noblemen line 24

(who are) bearers of wisdom line 25

Lines 27 and 28: Nothing to indicate a juncture here.

Lionel Kearns comments that the layout of stacked verse "represents the score of the poem as it should be performed." Performances, obviously, will vary and the choice is always with the performer to what extent he will (within the requirements of the underlying structure) break up or assemble phonemic clauses. This poem might be read very rhythmically

in short clauses (as the layout suggests) or assembled into the longer units that I thought I heard. Even in the short lines as typed, there is the further possibility in reading of breaking some of them up still further. For example, line 10 might be read:

soár↓ of autópsy↓

or line 15:

these clótted↓ fórms↓

III Syllables

There is some indication of pattern between the vowels of the stressed syllables. In Stanza I, these consist, broadly, of front vowels and diphthongs. Stanza II carries back vowels in all but line 13 /aɪ/ and line 16 /æ/. Stanza III has 3 front vowels, 1 diphthong and 1 lax back. Stanza IV is composed of all front vowels except /ɔ/ of rotting.

IV Stress

If the line pattern signals repeat phonemic clauses, there is only one line where the stress is in doubt; line 16 which is a matter of lexical stress which is read éctoplasmic, not with the stress on plasm as the line pattern suggests.

N O T E SCHAPTER VII: POEMS BY SIMON FRASER UNIVERSITY POETS

- 1 Lionel Kearns, Songs of Circumstance, University of British Columbia, MA Thesis (1964).
- 2 George L. Trager and H.L. Smith, Outline of English Structure, (Oklahoma, 1951), Studies in Linguistics, Occasional Papers, #3., #1.72, p. 49.

CHAPTER VIII

CONCLUSIONI WHAT WAS INTENDED

This paper set out to find ways of discussing verse structure strictly in terms of language. The concept of verse structure in this paper included the movement of verse, and the particular language in which verse is written, but did not extend beyond the mechanics of language.

Appropriate linguistic theories were to be brought together wherever possible to describe verse structure and the possibility of applying T-grammar theory in this connection was to be explored.

II WHAT WAS INVOLVED

Once the concept of the extra-linguistic abstraction of meter is disallowed, the main issues in discussing the structure of verse language turn out to be:

- A. what language features constitute the movement of verse?
- B. what connection is there between the grammar of verse language and the grammar of the main language?

The problem of language terms for the movement of verse showed itself to be largely one of relating units. On the one hand, there was the sound pattern of stress that constitutes the rhythm of English verse, and on the other, there was the graphic unit of the line. A simple way of bridging the gap seemed to be to 'observe' the sound features of the poet's reading, to note the stress and to relate what was heard to what was written. In effect, this is what was done, but before it was done effectively, some way of observing the sound had to be evolved so as to avoid the deceits of perception and so as to give a unit that could be related to the verse line. The unit that emerged was the phonemic clause with juncture as a feature common to both.

VERSE MOVEMENT

(a) The phonemic clause as a unit of sound

Juncture is the most perceptible of all configurational features. Though not all junctures can be heard, the grosser ones can--as the voice graphs made for this paper show quite clearly. Therefore, at least some phonemic clauses can be set up by observing junctures, and with the phonemic clause, the existence of a primary stress is established and, although it is not placed precisely, its position is determined within a certain number of syllables.

Amplitude and frequency might have been reliably observed on a spectrogram, and if a sound spectrograph had been available, the problem of the thesis would have been a different one. Juncture, however, could be recorded by the equipment available as a sort of negative reflex of the voice. Where there was voice sound, there was a recording from the oscillation of the needle, where there was no voice sound, the needle did not oscillate, or oscillated to a reduced degree.

(b) The phonemic clause as a unit of the graphic line

To choose the phonemic clause as a unit of printed verse (i.e., as a unit of the graphic line) has its advantages too. This unit can be set up

theoretically either on the basis of the word group (as John Nist does)¹ or according to phrase groups in the T-grammar manner, but however it is done, it is flexible (within the demands of lexical stress and the underlying phrase structure) in the way it can be realised; even to the extent of it being possible, for a chosen kind of reading, to sub-divide into smaller phonemic clauses. That is to say, the phonemic clause unit allows for variations of performance, for rhetorical stress and of pitch, whereas units based on the stress itself have to be re-stated for varying readings.

The assignment of stress by cyclic rules applying to phrase bracketed sections of speech, shows the relation of stress to changing phrases and it is for this reason that I have brought what I know of the Chomsky stress rules into this paper.² For analysis, however, the operative connection lies, in my opinion, between the presence of juncture and the presence of stress. The Trager-Smith observation that a primary stress is found in the presence of terminal junctures and that secondary stress requires the presence of /+/³ seems to me to be fundamental to the analysis of verse movement. The Epstein and Hawkes foot division which contrasts contiguous degrees of stress⁴ is based on the Trager-Smith Outline, although the Abercrombie foot, which is the physiological 'stress-pulse', depends, in graphic analysis, on identifying the stressed

syllable.⁵ My contention is that the phonemic clause could, if need be, work for either system (both of which are limited to metered verse and the graphic line), and also provides a unit that can be extended to the analysis of the 'free' line.

(c) The graphic line

Where the line's sound shape is relatively clear from the expectation of metrical repetition or rhyme or other traditional line-markers--in what I have arbitrarily called metered verse--the connection between the sound substance and the graphic substance is not difficult to make. However, in my other arbitrary division of unmetered verse, where the line does not have clear sound markers, the gap between the graphic line and how it sounds is a good deal harder to bridge. The hypothesis of a 'line-end juncture' is a step in a helpful direction and works up to a point, but one has to acknowledge that there are instances where a poem has visual qualities that do not necessarily have an audible equivalent--even when the poet does his own reading and in spite of the sign language of the poets of the "Projective" school of verse that has developed since the typewriter.

(d) A physiological unit

The role of body rhythms seemed worth looking

into for a possible function in verse movement. That is to say, might there be a connection between the physiology of speech production and the graphic verse line. Or, once verse is free of the artificial constraints of 'closed' form, might not the poet shape his line and the movement of his verse according to what he felt to be the 'natural' rhythms of speaking? From the physiological point of view, a lot of side issues came up which cannot, I think, be disregarded, but at the same time, it is hard to know how, properly, they can be regarded. The fact, for instance, that the normal rhythms of producing speech are below the level of deliberate consciousness, whereas the poet in composing verse is acting deliberately, and where in this situation does the role of the reader--even the poet reading his own verse--fit? The reader is not generating language, he is just reproducing the form of the language the poet has generated. Do the physiological rhythms of speech generation, of which breathing is one, apply? Are these the rhythms that a poet wishes his verse to represent? With the apparatus available to me, it was possible to record chest movements of the readers and so get a curve which represented their breathing, though perhaps in an approximate way. The results are interesting because of the great differences they show between individuals. How much connection there is between the unit of breath and the graphic line

in contemporary verse, even in projective verse which claims the line as determined by the breath, it is hard to say. From a tentative and crude beginning like this one, limited to three poems and three poets, all one is justified in saying is, I think, that the role of breath in the structure of verse is a matter of individual style.

VERSE LANGUAGE

(a) Verse language as it affects verse movement

One need not argue the point that verse language differs from the main language in many ways; it obviously does. It moves in a different way and it is structured, seemingly, according to syntax that is different from the syntax of the main language. However, it should be noted that without recourse to extralinguistic abstractions in a discussion of the movement of verse, the terms developed (as I have developed terms for the movement of verse in this thesis) can only be terms borrowed from the main language. All the suprasegmentals and the phonemic clause division come from speech, not from verse. And the functioning of the rhythmic features of language--stress, juncture and so on--depend ultimately on how the language is structured underneath the surface on which they operate. And yet it can happen--in verse of any kind, but with many examples in the poems

examined in this thesis--that a particular poem will have instances of grammatical construction that cannot be accounted for in terms of the syntax of the main language. To be able to analyse such a poem in terms of movement or meaning or anything else, or to be able to read it in any comprehensible way, the syntactic structure has got to be understood. One has got to be able to "recover the P. marker."⁶ How is this to be done? Is one to write a 'grammar' for each separate poem, or a 'grammar' to account for each poet's characteristic stylistic deviations? I contend that for verse language this is not so. That the problem is not to account for each sample of syntax in each separate poem but to make the connection between the 'deviant' grammar and the main grammar. There has to be, I think, a 'grammar' of the movement of each poem. In metered verse, this can, for those who like to do so, be typed according to a certain pattern, but in unmetered verse, the movement 'grammar,' the prosody, the versification, has to be discovered for each poem in terms of the poem's language. But the poem's language can only be stated in terms of the main language or the poet would have to be thought of as composing in a language code known only to himself. I believe a viable connection can be made between the language of any poem and the main language, and I would wish to keep notions of 'deviation' and 'ungrammaticalness' as completely out of an analysis of verse

language as I wish to keep the metrical abstractions out of an analysis of verse movement.

It is my conclusion, as a result of the analyses carried out in this paper, that in the operation of the language (theoreticians apart), there are extensions of which verse language and common parlance are both examples (and no doubt there are others) which make use of what one might call a 'domain of choice.' The poet is not concerned with 'well-formedness' in the theoretical sense and neither is slang or language extended for any other use, and people who deal in language theory would do well to recognise the function that this kind of extension plays in the living language and in language change.

The Cummings grammar was discussed in detail against specific examples of idiosyncratic usage, but always as an extension of the main grammar, not as a deviation from it. It is not hard to find instances in common language use in which language rules are 'stretched' within the domain of choice in ordinary usage and eventually find their way into respectable grammaticalness. The change of category of the use of haves and have nots as [+ noun], is a case in point and the change in sub-category in metaphorical uses such as leg, which goes from [+ animate] to [- animate] in the leg of a table, or scope which goes from [- abstract]

to [+ abstract] as it moves from meaning the length of anchor chain to the range of possibility.⁷

III WHAT WAS ACHIEVED

Linguistically this paper has, I think, shown that the feature of juncture is important in the analysis of verse movement. The Stockwell use of juncture in the expansion of intonation pattern has been a useful tool, but does not provide for the presence of all possible junctures or all the possible breakdowns into phrases bounded by juncture. The statement of the generation of phrase junctures which seems to be promised as part of the 'forthcoming' Sound Pattern of English will, I think, open up new and probably more elegant ways of applying juncture to an analysis of verse.

In spite of a rigid restriction to the mechanics of language, the type of analysis which this paper has accomplished has, I think, wider implications. To start from the objective basis of language analysis can lead to insights into the structure and form of the meaning and intentions of the poem. To set the poem out within the grid system of lines against syllables organized into hypothetical phrases from which the sound pattern of the poem may have been generated, has pedagogical advantages. It is objective

and tentative and based on the language which the poem shares with the reader. It is a detailed and laborious method, granted, but it at least avoids the affront to native intuition that comes from artificial metrical scansion.

Much more, obviously, can be done in the way of empirical observation. Spectograms would fill out many of the gaps about pitch and stress in a particular reading (though account would have to be taken of the possible absence of physical signals predicted by the structure) and data collected from a larger sample of readings correlated with breath patterns would enable one to say much more about the role of breathing in verse structure.

My conclusions are that there are already linguistic tools with which the verse structure of contemporary, unmetered verse may be analysed. That developments in linguistic science will probably bring more. That the approach developed in this paper applies very well to traditional metered verse and that as verse is the phonetic output of the poet's competence in both the main language and in verse language, there is no need to resort to metrical abstraction for the analysis of verse movement or to rules of deviation to account for his language.

N O T E SCHAPTER VIII: CONCLUSION

- 1 John Nist, "Word Group Cadence: Basis of English Metrics," Linguistics VI (1964).
- 2 see Chapter II, pp. 37-39 above, and Chapter II note #29.
- 3 George L. Trager and H.L. Smith, An Outline of English Structure, Studies in Linguistics, Occasional Papers, #3 (Oklahoma, 1951), 1.61, p. 35, and 1.62, p. 39.
- 4 E. L. Epstein and T. Hawkes, Linguistics and English Prosody, Studies in Linguistics, Occasional Papers, #7 (Buffalo, 1959).
- 5 David Abercrombie, "A Phonetician's View of Verse Structure," Studies in Phonetics and Linguistics (Oxford UP., 1965).
- 6 Philip Lieberman, "On the Acoustic Basis of the Perception of Intonation by Linguists," Word 21, #1 (April 1965), pp. 40-54.
- 7 Noam Chomsky, Aspects of the Theory of Syntax (Cambridge, Mass., 1965), Chapter 4, #1, p. 148.

- this section discusses the choices open at the various levels in terms of degrees of ungrammaticalness. Chomsky makes the observation that there is an order in the sub-categorial features which makes aberrant choices of high level features (such as ± count) more difficult to interpret than if the choice had been a low level feature, say [± human]. But at the same time he points out that the real difficulties of interpretation come from perfectly well formed but ambiguous sentences - i.e. sentences that have two possible underlying phrase markers.

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APPENDIX Z

The accompanying tape recording constitutes the Appendix Z of this thesis. The recording consists of:

- 1) Poems A, B, and C of Chapter VI, recorded from the E.E. Cummings reading on Caedmon record #TC 1017
- 2) The three poems discussed in Chapter VII.

The recorded voice for the Cummings poems was picked up via an electronic connection by a Type 1551-C Sound Level Meter (General Radio Co.,) and graphed on an E. & M. Physiograph. Paper speed was 5 centimeters per second. Time intervals of one second are recorded at the foot of the graph and can be heard on the tape. The poems as recorded can be followed on the voice graphs. These graphs - which as originally recorded showed in one extended line (the longest around 20') - have had to be cut up, realigned and reduced for purposes of reproduction. In order to give some visual impression of the pattern of voice and quiet, the cutting and alignment had to be worked out to suit each poem individually, but in every case the end of the first line of graphed oscillation can be connected with the beginning of the second, and so on.

POEM A

The voice graph (p. 128) is laid out according to the graphic lines of the poem and is lined up on an axis so as to show the sections of quiet between the lines.

POEM B

The voice graph (p. 137) is laid out according to stanzas with stanza ends lined up on an axis.

POEM C

The voice graph (p. 140) is laid out according to the periods of longest voice quiet without any connection with the graphic line.

Voice graphs can be read in conjunction with the tape and synchronized by means of the recorded one second calibrations at the foot of each graph.

The extent of quiet periods cannot be judged precisely but have been taken to be those stretches of the graph where the needle has not oscillated \pm one calibrated square of the paper on which the original recording was made. (Reproductions as bound into the text were reduced by).

Words have been written onto the graph (the positions checked by stop-watch) so as to lie within the stretches of speech graphed as voice activity (noise). The words cannot be related precisely to the oscillations shown on the graph; i.e. peaks of oscillation merely represent moments of increased noise and cannot be taken as showing presence of stress, pitch or particular phoneme sounds.

The second group of three poems was recorded from readings by the individual poets at Simon Fraser University in July 1967. For these poems, because the readings were made into a microphone (not picked up electronically as

as for the E. E. Cummings poems), the oscillations of the voice graph never show periods of complete quiet, merely of reduced activity. There is also a good deal of noise picked up from the clicking of the needle of the E. & M. Physiograph.

Graphs for these three poems show a curve for the breathing of the reader. This was graphed via an expandible device around the chest connected to the E. & M. Physiograph. This curve represents the expansion of the chest during reading.

POEM #1

Dale Sullivan's reading of his 'apology to a dead god.' The voice graph (p. 152) is reproduced in a pattern in which breath groups are aligned on an axis arbitrarily chosen for the sake of the visual pattern. There is no connection with the graphic lines of the poem.

POEM #2

Robin Blaser's reading of a section from his "Moth Poem." The voice graph (p. 161) is arranged much as the voice graph for poem #1.

POEM #3

Lionel Kearns' reading of his poem "AMBERGRIS," The voice graph (p. 171) of this poem is reproduced according to the major breath groups which correspond to a large extent to the stanza pattern of the poem.

TAPE TIME: 11 minutes 49 seconds.