'Aspects of Rhythm and Verse Structure in English'

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TABLE OF CONTENTS.

Introduction	1 - 9
PART I	
INTERNAL ANALYSIS	
An Analysis of Verse Structure e.e. cummings "anyone lived in a pretty how town" - A Third Approach	10 - 14
Text and scansion of the poem	15
A. Lines.	
Arrangement according to the number of syllables per foot	16 - 18
Positional Modifications	18 - 25
Basic Patterns	25 - 27
Progress of First Lines; complete patterning of the stanzas	27 - 28
Lines exemplifying all the numerical patterns discerned in the poem, basic patterns and modifications	29 - 31
Patterns with and without reinforcement	31 - 35
Patterns without reinforcement	35 - 38
B. Line-End Markers.	39
Line-end Markers; Basic Patterns	42
Structural combinations of these patterns in the course of the poem	43 - 44
Line-end Markers in relation to Rhyme	44 - 46
C. Rhythmic Movement.	47
Numerical Modifications in each stanza	47 - 59
Modifications; Structural Typology	60 - 65
Quantitative Modifications	66
Quantity patterns for the whole poem	66 - 68

Foot Types; variation and repetition	69 - 70
Line Repetition	71 - 72
Partial Repetition	73 - 74
Groups within the repetitive quantity patterns;	75
Group I	75
Group II	76 - 77
Group III	77 - 78
Group IV	78 - 84
Rhythmic movement; Modifications within stanzas, line progression	85 - 95
Selected Modifications	96 - 106
Rhythmic patterning in relation to intonation curve	107 - 109.

EXTERNAL ANALYSIS

A comparison with another poem by e.e. cummings: "my father moved through dooms of love"	110
Text and scansion of the poem	110 - 111
Numerical Patterns;	112 - 116
Basic patterns and modifications	117 - 122
Rhyme	122 - 127
Quantity Patterns:	128
Quantity patterns in the poem	128 - 130
Foot types; variation and repetition	131 - 133
Line repetition	134 - 136
Identical lines in the two poems	137 - 139
Line-end Markers	140 - 144

Partial repetition 145 - 147

Patterns and Modifications, Typology 148 - 159

Repetition and change in Line Transition 160 - 165

PART II

An instrumental analysis of one poem read by several speakers. T.S.Eliot "The Waste Land", part IV 166

Procedures, Problems and Arbitrary Decisions 167

Choice of readers 167

Spectrograms 167 - 168

Segmentation and measurement 168

The segmentation of spectrograms - arbitrary decisions 169 - 171

Accuracy of measurement 171

Feet; Types of measurement 172 - 174

Explanation of tables 175 - 179

Legend 179 - 180

TABLES

First set ; feet in sequence 181 - 226

Second set ; Types of feet, duration 227 - 247

Third set ; Types of feet, ratios 248 - 253

Fourth set ; Foot duration in sequence, including estimated foot boundaries 254 - 255

Conclusion 256 - 266

Selected bibliography 267 - 270

Summary

The temporal approach[1] to the study of rhythm and verse structure is used here to compare and analyse two poems by e. e. cummings, "anyone lived in a pretty how town" and "my father moved through dooms of love".

An initial claim is made that the intricate rhythmic structure in "anyone" has not received sufficient consideration as a result of being overshadowed by the immediate impact of the grammatical innovations in the poem. A comparison with the other poem in which grammatical innovations were also employed, but with a less varied rhythmic structure, confirms this judgement. This is highlighted in a separate section ('Selected Modifications') where consideration is given to grammatical innovations in a rhythmic setting which does not reinforce them.

The comparison and analysis of both poems were carried out according to the basic aspects of rhythmic structures. Line patterns were first analysed (section A 'Lines: Arrangement according to number of syllables per foot, Positional Modifications, Basic Patterns') according to the number of stresses (four here) and the number of syllables per foot.[2]

These numerical patterns were examined further in order to discover features which relate them. Three basic patterns and a set of patterns modified from them according to distinct rules were postulated and features of positional arrangements within the related patterns were discussed here.

1. See D. Abercrombie, "A Phonetician's View of Verse Structure", "Syllable Quantity and Enclitics in English", "Steele, Monboddo and Garrick" in Studies in Phonetics and Linguistics, O.U.P., 1965. further reference in M. Sumera, "The Temporal Tradition in the Study of Verse Structure", Linguistics, No. 62, 1970.

2. See Abercrombie "A Phonetician's View of Verse Structure".

This was followed by an examination of the numerical modifications taking place in the transition from one line to the next (Section 'Rhythmic Movement'). Rules operating here were also discerned.

The next major component, the Quantity Patterns and their Modifications (Section C 'Rhythmic Movement') were discussed in detail. Here the syllable quantity rules[3] put forward by Professor David Abercrombie were used and were further extended to cover 3-syllable feet. The two components, at first treated separately, were subsequently treated together in the Section entitled 'Rhythmic Movement' where line transitions were discussed in terms of changes in both.

Separate sections were given to the consideration of other aspects of verse structure: Rhyme, Line-end Markers[4] (here, the last two feet in the line), Foot variety, Line Repetition, Partial Repetition, and (in "anyone") Rhythmic Patterning in relation to Intonation Curve.

All the comparisons have confirmed the initial impression of the varied and well controlled rhythmic structure in "anyone". The similarities and differences between the two poems, summarized in the Section 'Repetition and Change in Line Transition' show a major shift in emphasis in the two basic components: while the rhythmic variety in "anyone" results from changes in the numerical component, in "my father" it is achieved through subtle variations within the quantitative component.

3. See Abercrombie "Syllable Quantity and Enclitics in English"

4. See Abercrombie "A Phonetician's View of Verse Structure".

Part II

Three aspects of rhythm were analysed here:

a) the relation of performance to the postulated scansion (six recordings of the same poem read by different speakers on different occasions)

b) segment duration

c) foot duration

Ad a) Small variations were found among the readers, all predictable. (See first set of tables).

The data for b) and c) were obtained by spectrographic analysis. Procedures employed and arbitrary decisions taken in the course of the analysis are to be found in the section entitled 'Procedures, Problems and Arbitrary Decisions'.

Segment durations were found to show both a tendency to inherent length and to adjustment to the length of higher rhythmic units (syllable, word, foot). This can be seen in the first set of tables.

Similarities and differences among the various speakers became apparent here and these could be grouped according to the tendencies they displayed with regard to segment ratios.

Foot duration was found to vary for each speaker, at least two tempo ranges being noticable for each type of foot. The range of durations appeared to diminish when the estimated foot boundaries had been calculated in cases involving silent stresses. Feet grouped according to type in terms of number of syllables per foot (see second set of tables) also showed variation in their respective weighted means.

A comparison carried out between the different types of foot as represented by the means (third set of tables) revealed a tendency for the different types of feet to assume some degree of proportionality, the most frequent ratios being 1, $1\frac{1}{3}$, $1\frac{1}{4}$, $1\frac{1}{2}$ with under- and over-shooting.

The ranges of duration present in each kind of feet tended to overlap at various points so that isochrony could be seen to re-assert itself. In the example chosen, recording I measurement A, filled feet of 3- and 4-syllables corresponded to the upper range of durations in 2-syllable filled feet. The durations of 1-syllable feet followed by a silent stress corresponded to two ranges in 2-syllable filled feet in the same recording, while 2-syllable feet followed by a silent stress showed a greater similarity with 3- and 4-syllable filled feet, having an upper range of durations as their starting point here. (For details, see Conclusion, Part II.)

It can be seen (using the information provided in the first set of tables which show feet in their sequential appearance) that di-pods, corresponding to certain syntactic structures (e.g. phrase, clause) show a tendency to similar length. In such cases the emphatic lengthening of one foot may be compensated by a shortening of the other.

All these aspects, a regular internalized beat and relations of proportionality between different types of feet as well as overlapping in durations across the different types of feet through which isochrony re-asserts itself, contribute to make rhythm in English a complex phenomenon. The complexity is further increased by the addition of the other aspects, syllable quantity and 'segment quantity' to produce a rich texture of inter-relationships.

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INTRODUCTION

This thesis is divided into two main parts: (I) verse structure and (II) instrumental analysis.

Part I

Here, two poems by the same poet (e.e. cummings) are analysed and compared. The poems chosen are "anyone lived in a pretty how town" and "my father moved through dooms of love".

The reason for this choice lies in the fact that previous analysis of "anyone lived in a pretty how town" have tended to concentrate on its striking grammatical characteristics, leaving the rhythmical component out of consideration. My intention is to supplement these analyses by showing the intricate rhythmic structure of the poem without which the grammatical innovations would not have made so great an impact. I also desire to correct any impression that the stylistic success of the poem lies solely in its grammatical innovations; I hope to demonstrate the importance of the rhythmic component in making the poem so effective.

This claim may be supported in two ways: internally, by examining a few of the striking grammatical innovations in a rhythmic setting which does not enhance them (section "selected modifications" in part I), and, externally, by analysing another poem with similar grammatical innovations but a less elaborate rhythmical structure. For that purpose, I have used "my father moved through dooms of love" Further details concerning the presentation of the analysis of verse

structure are to be found in the section entitled

"An Analysis of Verse Structure
e.e. cummings: anyone lived in a pretty how town - A Third Approach"

Part II

This part is based on a spectrographic analysis of one poem (T.S.Eliot, "The Waste Land", part IV) read by several different speakers. The measurements were made at the level of foot duration and segment duration.

The comparisons have been carried out using Professor Abercrombie's scansion of the poem as basic reference.[1]

Certain differences among the individual speakers were expected, most of them predictable:

(a) differences in the rate of delivery and timing

(b) differences in the choice of feet for emphatic lengthening, depending on what the speakers decided to regard as topic or comment

(c) differences in the stress pattern where the syntactic construction permitted a choice of grouping the constituents into one or two feet

(d) small individual differences at the segment level.

The results of these measurements have been presented in several ways:

(a) A sequential presentation, i.e. according to the serial order of feet. Tables have been made, each corresponding to a foot in the text as marked by the scansion, giving the segment durations and foot

1. This was used previously by me for my M.Litt. thesis "Some Aspects of Rhythm and Verse Structure in English", Edinburgh University, 1966.

durations for each speaker.

Whenever an optional variant in the division into feet was possible and was found in at least one of the speakers, this has been marked by allowing it a place at the top of the column and enclosing it in brackets. Where it was not possible to obtain a measurement, this has been indicated by placing a dash in the appropriate box. Three types of foot measurements were made and these are explained in the section entitled "Procedures, problems and arbitrary decisions"(pp.167-174)

(b) Presentation according to type of foot (number of syllables per foot)

The feet were then grouped according to types, and their duration and weighted mean shown for each speaker.

Standard deviation and variance were calculated for each mean.

A general mean for every type has been added.

(c) The relation between the various types of feet as displayed by the weighted mean.

The weighted means for each speaker were subsequently compared with respect to the various types of feet. Ratios have been calculated from the absolute durations.

(d) A presentation of foot duration in sequence taking into account the estimation of expected foot boundary

A vertical display is given here of foot duration in sequence for each speaker (for one type of measurement), with estimates of expected foot boundary where the actual measurement was not possible.

A graph paper was used for the display.

Further details are again to be found in the section entitled "Procedures, problems and arbitrary decisions".

CONCEPTS used in both parts of the thesis.

The Approach and Concepts adopted in this thesis

The approach to the study of verse structure in this thesis is derived from the temporal tradition,[1] and David Abercrombie's articles "A phonetician's view of verse structure" and "Syllable quantity and enclitics in English",[2] and "Some functions of Silent Stress".[3]

"English verse ... depends on a rhythm which is temporally organized - it depends on the division of time into temporal units". (Abercrombie, p.22).

These temporal units are delimited by stress and are referred to as feet.

Foot

"English utterances may be considered as being divided by the isochronous beat of the stress pulse into feet of (approximately) even length. Each foot starts with a stress and contains everything that follows that stress

1. M.Sumera "The Temporal Tradition in the Study of Verse Structure", Linguistics, No. 62, 1970.

2. "A Phonetician's view of Verse Structure" paper given to the Durham English Society in May 1961, and published in Linguistics No. 6, 1964. D.Abercrombie "Syllable Quantity and Enclitics" paper given at the meeting of the Linguistic Association (Great Britain) at Hull in May 1961, and published in In Honour of Daniel Jones, London (Longmans),1964. Both papers included in Studies in Phonetics and Linguistics,Oxford (OUP), 1965.

3. D.Abercrombie "Some Functions of Silent Stress", Edinburgh Studies in English and Scots, Longmans, 1971.

up to, but not including, the next stress". (Abercrombie, p.28). The foot, as described above, has one more property: it is independent of word boundaries.

The tendency to isochrony was noticed earlier by Joshua Steele, as Abercrombie points out:[4] "The measure of speech, in prose as well as poetry, is governed, he (Steele) maintained, by a 'pulsation of emphatic and remiss', which divides it into cadences or bars. He claims that in English the cadences are of equal length, that is to say that the pulsation is periodic, or tends to be; and although doubts about what we are going to say next, and other things, may throw the regularity out for a moment, it always reasserts itself".

For our purposes, the foot may be regarded as displaying a tendency to temporal regularity, though changes of tempo must be allowed for.

The stress which delimits the foot may sometimes fall on silence - "a stress pulse can occur without sound accompanying it" (Abercrombie, p. 20). Feet initiated by a silent stress and containing one or more unstressed syllables shall be referred to as partially-filled feet. Feet totally occupied by silence will be referred to as silent feet, and those totally occupied by 'speech' as filled feet. Feet without initial or final boundary shall be referred to as unbounded feet.[5]

4. "Steele, Monboddo and Garrick", Studies in Phonetics and Linguistics, p.38.

5. Katherine Patch, "Syllable duration in Prose Read Aloud", Diploma Dissertation, University of Edinburgh, 1962.

Foot variety

In my analysis of verse structure I paid attention to the next important factor which had been pointed out by Abercrombie, the foot variety. "We find in English verse more kinds of feet than in Latin verse, for example. This variety is of two kinds: it lies both in the number of syllables, and in the relative length or quantity of the syllables, which are in the foot. The number of syllables may vary from none (if it is a completely silent foot) to four or even occasionally more" (Abercrombie, pp. 23-24).

"The relative length of syllables is a further source of variety, even between feet containing the same number of syllables. Syllable-quantity, in other words, is a factor which cannot really be left out of account (though it usually is) in examining the structure of English verse" (Abercrombie, p.24).

Syllable quantity

"The quantity of any syllable is a proportion of the total length of the foot within which the syllable occurs and it is relative to the quantity of any other syllable in the foot. We cannot therefore say anything about the quantity of a syllable until we know its place in the foot". (Abercrombie, p.28).

"When a foot consists of two syllables, for example, it does not necessarily follow that these syllables will divide the time of the foot into two equal halves. They may do so, but they may divide it into (approximately) one-third and two-thirds respectively, or

conversely into two-thirds and one-third".(Abercrombie, p.24)

"Three-syllable and four-syllable feet offer even greater possibilities of variation. It should be remembered that syllable quantity in English is entirely distinct from stress: the two factors are quite independent of each other. Syllable quantity must not, moreover, be confused with vowel quantity; a so called 'short' vowel often occurs in a long syllable" (Abercrombie, p.24).

Although a number of writers[6] have indicated syllable lengths, usually by means of musical notation, most of them made "no attempt to work out the factors which determine the quantities, or to classify the patterns they form". (Abercrombie, p.27). Daniel Jones's observations (Outline of English Phonetics, 3rd ed., Cambridge, 1932) provided the starting point for David Abercrombie's investigations which have led him to postulate three patterns for two-syllable feet in English, depending on the phonematic structure of the foot or the presence of word boundary. They are as follows:

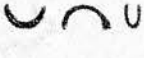
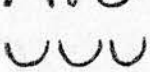
Type:	Pattern: (units of time)		Phonematic structure:	
A	1	2	(i) (C) V_1 CV (C)	V_1 = 'short' vowels
B	1½	1½	(ii) (C) VCC (C) V (C)	V = any vowel or diphthongs or a syllabic liquid
			(iii) (C) V_2 (C) V (C)	V_2 = 'long' vowels or diphthongs
C	2	1	the presence of word division	

6. See Abercrombie, p.27.

There are exceptions within type C, when the phonematic structure rather than the presence of a word boundary, determines the syllable quantities.

Here, I have tried to confine myself to marking the most frequent enclitics, namely those occurring when a verb is followed by a pronoun, whether a subject or object, within a foot.

For three-syllable feet, I have adopted the scheme suggested in my M.Litt. thesis to account for the differences in patterns like the following:

	Units of time: (approximate pattern)			Notation:
| one for the | road	1½	⅔		
| little and | small	½	1½	1	
| after the | war	1	1½	½	
| nobody | knows	1½	½	1	
| anything | more	1	1	1	

The patterns are similar to those for 2-syllable feet and word division was found to play an important part here as well. Patterns 1½ ⅔ (in duple reading 2 ⅓), 1 1 1, and ½ 1½ 1 are schematized to some extent, due to the constraints of the system of notation (3 units of time) and a desire to avoid making minute distinctions.

I am aware that rhythmic assimilations [7] can take place within

7. P.Fraisse, Les Structures Rythmiques, Studia Psychologica (Publications Universitaires de Louvain) 1956.

these patterns and most of them may remain in free variation, but in order to preserve a clear picture, I adhered to the archetypal patterns in my description.

I have adopted one more concept from David Abercrombie, the Line-end Marker. In his use the term covers various devices which delimit the line as a unit, e.g.

(a) rhyme or assonance

(b) a silent final stress

(c) a monosyllabic foot

In my analysis, I have extended the term to refer also to the last two feet in the line.

I have used the term modification to explain the relationship between the various rhythmic patterns as they follow each other in successive lines. Most of the time, I have adopted a sequential order in my analysis of rhythmic patterns, though I am aware that a greater wealth of relationships, and in a different order, is produced in the listener's mind through rhythmic associations. These, however, it is not possible to discuss here.

An Analysis of Verse Structure.

e.e. cummings: anyone lived in a pretty how town - A Third Approach.

The poem I have chosen for analysis has already been discussed by at least two scholars, J.P.Thorne (65) and E.M. Whitley (65)[1], each from a different angle and each making an essential contribution to the full appreciation of the poem. Both were significant contributions to stylistic analysis and had wide response and repercussions among those interested in this field of study. Such, however, is the richness of the poem that a great deal of its intricate structure has still to be taken into account.

Mrs. Whitley, in her analysis of the poem, concentrated on the theme and its formal correlates and acknowledged the innovations on the collocational and grammatical level. Mr. Thorne analysed what was perhaps the most striking feature of this poem, its unique grammar. He argued that an independent grammar had to be posited in order to deal with the innovations introduced in the poem.

1. J.P. Thorne, "Stylistics and Generative Grammar" Journal of Linguistics 1 (1965). Also: S. Levin, Linguistic Structures in Poetry, Janua Linguarum No. 23, Mouton, The Hague, 1962. W.O.Hendricks, "Three models for the description of poetry", Journal of Linguistics 5, (1969); J.P. Thorne, ibid. E.M. Whitley, "Theme and Form in Stylistic Analysis". Paper delivered at the meeting of the Linguistic Association of Great Britain, Newcastle, 30.3.65.

Perhaps the main impact of the poem does come from the immediate realization that it breaks the rules of Standard English, but its total effect is controlled, and it has to be if the method is to be effective, by the fact that the kind of irregularity it exhibits is regular in the context of the poem. It is this feature of careful control that pervades all the formal aspects of the poem to which I wish to draw attention in my analysis. The analysis I am offering here is not an attempt to follow any of the previous approaches in greater detail nor is it an attempt to contradict any of the contributions made so far. Rather it is conceived as a complementary approach to those existing already and is to be viewed in conjunction with them, if a complete picture of the structure is ever to emerge. My aim is to analyse the architectonic design of the poem and to show its ingenuity, as I believe the poem to be a clever piece of engineering and that not only on the grammatical level, but on the level of verse structure as well.

In contrast to the grammatical innovations, which are numerous and striking, the verse structure appears naively simple - deceptively so. In contrast to the sweeping grammatical changes, the verse structure is also rigid and very traditional - almost anachronistically so, undoubtedly by design and by a conscious choice.

Grammatical and stylistic innovations are, however, not enough to make a poem; in fact they do not guarantee that the piece

will be received as verse rather than a somewhat chaotic prose. We need other devices to perform this function, and these are the traditional ones; rhythm, stress, rhyme, and the stanza form.

The Stanza Form.

This is extremely simple here: nine stanzas, each consisting of four lines so that an effect of regularity is secured, perhaps even a monotonous regularity. In addition to this undifferentiated background, we have the stress pattern. It turns out to be equally regular: four stresses per line, without exception. There are nine stanzas of four lines each, four stresses to each line: four stresses repeated 36 times. However, too much regularity is a bad thing. In these circumstances an element of variation can only enter into the rhythms of the poem and the rhythmic innovations are, in this case, confined to the foot only. They are limited to two factors:

a) the number of syllables within the foot

b) the quantity patterns within the feet [1]

With respect to the number of syllables, it may be assumed that the possibilities for varying the number of syllables

1. In the analysis of the verse structure I have employed the foot theory as put forward by Abercrombie (1961) and used in the Phonetics Department at Edinburgh. This involves marking feet from stress to stress and allotting syllable quantities according to his scheme for two-syllable feet, and extending this to cover three-syllable feet.

within a foot in verse range from one syllable to five, or possibly six. A brief glance at the poem after it has been divided into feet shows that cummings has limited his selection to the range from one to three syllables per foot. There is no occurrence in the poem of feet with more than three syllables.

As for the further source of variation, syllable quantity patterns, these increase in proportion to the number of syllables per foot; there is only one possibility in a monosyllabic foot, three possible patterns in a two-syllable foot, but there are at least five possibilities within a three-syllable foot. cummings employs all three possibilities of quantity patterning within two-syllable feet, and makes use of four of the patterns available within three-syllable feet. It is of course to be remembered that the selection is to some extent inherent in the patterning of the language and the poet's conscious or intuitive choice is further limited by the lexical and syntactic structures affecting and to some extent predetermining the quantity patterning. I shall postpone the examination of the quantity patterning within the poem until I have dealt with the more general and broader outlines of its formal design.

I propose to carry out the present analysis in the following sections dealing respectively with:

INTERNAL ANALYSIS

A. Lines

i) Number of syllables within foot: their positional modifications, basic patterns inferred from them

ii) Patterns with and without reinforcement

B. Line-end Markers.

i) Patterns and their modifications in terms of number of syllables and quantity patterns

ii) Structural combinations of these patterns in the course of the poem

iii) Line-end markers in relation to rhyme; the respective patternings and their arrangement vis-a-vis one another.

C. Rhythmic movement.

i) Quantity patterns and their modifications

ii) Rhythmic patterning in relation to intonation curve

EXTERNAL ANALYSIS

A comparison with another poem by the same author: 'my father moved through dooms of love'. Structural similarities.

E.E. Cummings Selected Poems 1923-1958 (P. 44)

I
|anyone|lived in a|pretty how| town
(with|up so|floating|many bells|down)
|spring|summer|autumn|winter
he|sang his| didn't he|danced his|did.

II
|Women and|men (both|little and|small)
|cared for|anyone|not at|all
they|sowed their|isn't they|reaped their|same
|sun|moon|stars|rain

III
|children|guessed (but|only a|few
and|down they for|got as|up they|grew
|autumn|winter|spring|summer)
that|noone|loved him|more by|more

IV
|when by|now and|tree by|leaf
she|laughed his|joy she|cried his|grief
|bird by|snow and|stir by|still
|anyone's|any was|all to|her

V
|someones|married their|every|ones
|laughed their|cryings and|did their|dance
|(sleep|wake|hope and|then) they
|said their|nevers they|slept their|dream

VI
|stars|rain|sun|moon
(and|only the|snow can be|gin to ex|plain
how|children are|apt to for|get to re|member
with|up so|floating|many bells|down)

VII
|one day|anyone|died i|guess
(and|noone|stooped to|kiss his|face)
|busy folk|buried them|side by|side
|little by|little and|was by|was

VIII
|all by|all and|deep by|deep
and|more by|more they|dream their|sleep
|noone and|anyone|earth by|april
|wish by|spirit and|if by|yes.

IX
|Women and|men (both|dong and|ding
|summer|autumn|winter|spring
|reaped their|sowing and|went their|came
|sun|moon|stars|rain

A. Lines

Arrangement according to the number of syllables per foot.[1]

Stanza:	I	3	3	3	1
		2	2	3	1
		1	2	2	2
		2	3	2	1
Stanza:	II	3	2	3	1
		2	3	2	1
		2	3	2	1
		1	1	1	1
Stanza:	III	2	2	3	1
		3	2	2	1
		2	2	1	2
		2	2	2	1
Stanza:	IV	2	2	2	1
		2	2	2	1
		2	2	2	1
		3	3	2	1
Stanza:	V	2	3	2	1
		2	3	2	1
		1	1	2	2
		2	3	2	1

1. The count starts with the first complete foot in the line, and ends on the last syllable in the line.

Stanza:	VI	1	1	1	1
		3	3	3	1
		3	3	3	2
		2	2	3	1
Stanza:	VII	2	3	2	1
		2	2	2	1
		3	3	2	1
		3	3	2	1
Stanza:	VIII	2	2	2	1
		2	2	2	1
		3	3	2	2
		2	3	2	1
Stanza:	IX	3	2	2	1
		2	2	2	1
		2	3	2	1
		1	1	1	1

A casual glance is sufficient to single out sequences of exact repetition which are fairly evenly distributed over the poem. In the second stanza the two medial lines are identical:

Stanza:	II, line 2	2	3	2	1
	3	2	3	2	1

In the fourth stanza, the first three lines are identical:

Stanza:	IV, line 1	2	2	2	1
	2	2	2	2	1
	3	2	2	2	1

In the fifth stanza, the first two lines are exactly the same; the pattern is also repeated in line 4.

Stanza: V, line	1	2	3	2	1
	2	2	3	2	1
	4	2	3	2	1

In the seventh stanza, the exact repetition takes place in the last two lines, the reverse of the preceding occurrence:

Stanza: VII, line	3	3	3	2	1
	4	3	3	2	1

In the eighth stanza, the last one to contain an exact repetition, the sequence is shifted to the first two lines.

Stanza: VIII, line	1	2	2	2	1
	2	2	2	2	1

It will have been noticed that the exact repetition of lines proceeds according to a definite plan; it is structured according to a definite principle and the utmost care seems to have been taken to provide as much variation within this repetition as possible. Although the repetition involves a sequence of lines (two, or even three in the medial, transitional part of the poem) its place of occurrence within a stanza is varied continually. Starting with two middle lines in a stanza (stanza II, lines 2, 3) the sequence (different now in terms of the number of syllables) is extended to contain the first line as well; it is built up to a three line sequence in stanza IV, lines, 1, 2, 3. This three-line sequence (different again in terms of the number of syllables)

is then varied so as to confine the two lines of the sequence to the first two lines of the stanza (stanza V, lines 1, 2) and transfer the third line of the sequence to the last line of the stanza (stanza V, line 4). This place, the last line in the stanza, is subsequently taken up by the next repetition of a new sequence in stanza VII, lines 3, 4, to be again transferred to its reverse position in the stanza, that is to the first two lines, but, in accordance with the principle of variation, in a new pattern from the point of view of the number of syllables in stanza VIII, lines 1, 2.

Positional Modifications

In the preceding paragraph I have discussed positional modifications in a very special case: exact repetition. The positional modifications there referred to the occurrence of repetition with respect to its place in the stanza as a unit (whole line repetition). I now wish to turn to a different aspect of positional modifications on the level of the line and with regard to the number of syllables per foot. In the preceding section where we were concerned with the exact application of the principle of repetition no accurate account of patterns in terms of their number of syllables was taken. I merely noted the presence of a different pattern - or rather of a pattern different from the preceding one: in fact, patterns were repeated: 2 3 2 1 in stanzas II and V, and 2 2 2 1 in stanzas IV and VIII.

In the analysis of positional modifications within the line, I propose to group all varying patterns whose highest number of syllables per foot is 3 into one group A, and all varying patterns whose highest number of syllables per foot is 2 into another group B. For the time being, we shall not consider either their position in the stanza or their frequency of occurrence.

Group A

Patterns with a maximum of three syllables per foot:

stanza I	line 1	3 3 3 1
	line 2	2 2 3 1
	line 4	2 3 2 1
stanza II	line 1	3 2 3 1
stanza III	line 2	3 2 2 1
stanza IV	line 4	3 3 2 1
stanza VI	line 3	3 3 3 2
stanza VIII	line 3	3 3 2 2

A brief glance at the list of all types of patterning, with three syllables as the highest number of syllables per foot, reveals the following features:

i) most lines end in a monosyllable

ii) only two patterns end in a two-syllable foot (VI, 3; VIII, 3)

iii) within a line the three-syllable foot can occur:

a) three times e.g. 3 3 3 1 stanza I, 1.
3 3 3 2 VI, 3.

b) twice - the other foot being always a two-syllable foot[1]

c) once - the other two feet being invariably two-syllable feet

iv) within a line containing one or more three-syllable feet the two-syllable foot can occur:

a) once

b) twice

I now propose to divide the patterns into two sub groups: I - lines with a single occurrence of two-syllable feet

II - lines with a double occurrence of two-syllable feet

Group A (I)

An interesting feature of patterning is to be noticed within these combinations:

the two three-syllable feet can occur in a sequence and then occupy the first two positions in the line e.g. 3 3 2 1 stanza IV, 4

or be separated to occupy positions one and three in the line, e.g.

3 2 3 1 stanza II, 1

or they can occur together in a sequence occupying the second and third positions in a slightly modified line, 3 3 3 2

Looking at the pattern from another angle, we observe that the single two-syllable foot in a line containing three-syllable feet can occur (in a slightly modified pattern) in the last position,

1. Since the final foot ends the line in a monosyllable, except on two occasions mentioned above, there are only three variable positions to consider.

position No. 4, in the third position, in the second position

3 3 3 2 3 3 2 1 3 2 3 1

and is only missing (the potential slot in the pattern is not filled) in the first position: 2 3 3 1

Group A (II): double occurrence of two-syllable feet within a line containing three syllable feet.

A similar observation can be made about the double occurrences of two-syllable feet within a line containing three syllable-feet. This double occurrence may be found in a sequence occupying the first two positions: 2 2 3 1

or the feet can be separated to occupy positions one and three:

2 3 2 1

or the feet can appear in a sequence occupying positions two and three: 3 2 2 1

Looking at the pattern from another angle, we observe that the single three-syllable foot in a line containing two-syllable feet can occur in the first position, second position and third position:

3 2 2 1 2 3 2 1 2 2 3 1

and is only missing from the fourth position.[1]

1. Of course in mathematical terms, the possibilities of permutation of all the elements contained in the four places are much greater (81 in a four place sequence containing three numbers), but only a limited number has been used in the poem.

It will now have become clear that there is an exact parallelism in the arrangement of patterns within Group I and Group II and that they differ only with respect to one potential place being unfilled in the first slot in Group I and in its reverse, last slot, i.e. position IV in Group A (II).[1]

Group B.

Patterns with a maximum of two syllables per foot.

stanza III, line 4	2 2 2 1
stanza I, line 3	1 2 2 2
stanza III, line 3	2 2 1 2
stanza V, line 3	1 1 2 2

A brief glance at the list of all types of patterning with a two-syllable foot as the highest ranking foot reveals the following features:

i) most patterns end in a two-syllable foot (the opposite of Group A where most patterns end in a one-syllable foot)

ii) only one pattern ends in a one-syllable foot (in Group A only two patterns were in the minority group, the two-syllable ending)

iii) within a line the two-syllable foot can occur:

a) three times	e.g.	2 2 2 1	stanza III, 4
		1 2 2 2	stanza I, 3
		2 2 1 2	stanza III, 3
b) twice		1 1 2 2	stanza V, 3

1. The pattern omitted from consideration here, 3 3 2 2, is a balanced pattern with an even distribution of 3's and 2's, and can be regarded as parallel to pattern 1 1 2 2.

An interesting patterning within these combinations can again be noticed: the two-syllable feet can occur in a sequence occupying the first three positions in the line

e.g. 2 2 2 1

or be separated so as to occupy positions I, II, and IV

e.g. 2 2 1 2

or they can occur together occupying the last three positions, positions II, III, and IV

e.g. 1 2 2 2

Alternatively, we may notice that the monosyllabic foot can occur in the fourth position, in the third or in the first:

2 2 2 1
1 2 2 2
2 2 1 2

One place of occurrence, position II, remains unfilled.[1] In Group A position II was filled in both Groups A (I) and A (II), while of the positions which are now filled in Group B positions I and IV were unfilled in Group A (I) and A (II) respectively. There is only one occurrence of a somewhat modified pattern giving an equal division 1 1 2 2, but the available mathematical possibilities of permutation (16 in a four place sequence with two numbers) are again greater than the patterns selected from them.

A parallelism of patterning between the lexical and numerical (syllable-count) level may be noted in the two refrains in the poem. Since their lines do not contain any syntactic structures, merely

1. 2 1 2 2

listing of nouns, the possibilities of reordering them are again open. The first grouping refers to the rearrangements of the refrain referring to seasons:

stanza I, line 3	spring summer autumn winter	A B C D
stanza III, line 3	autumn winter spring summer	C D A B
stanza IX, line 2	summer autumn winter spring	B C D A

The second grouping refers to the rearrangement of the 'sun' refrain:

stanza II, line 4	sun moon stars rain	A B C D
stanza VI, line 1	stars rain sun moon	C D A B
stanza IX, line 4	sun moon stars rain	A B C D

Only a brief glance at the first grouping is sufficient to select the sequence CD as the one which undergoes transpositions from

positions III and IV in stanza I:	A B C D
to positions I and II in stanza III	C D A B
to occupy the medial position in stanza IX	B C D A

This conformity with the patterning discovered in the preceding sections of the analysis may at first be disclaimed as accidental, and the result of the particular sequential arrangement of the seasons since each repetition of the cycle starts at a different point in the cycle but does not alter its inherent sequence. However, in the 'sun' refrain there are no such internal constraints requiring a particular sequential order to be preserved, yet the pattern is continued with CD occupying the last two places in the line, positions III and IV from which it is then transposed to the first two places, positions I and II, only the third possibility of

arrangement being lacking on this occasion. The third occurrence of the pattern is an exact repetition of the first occurrence, and is largely predetermined by thematic (non-structural) reasons, in addition to being the closing line of the poem.

Basic Patterns.

After examining the principles behind the numerical patterning I wish to put forward a suggestion that three basic patterns may be inferred from them. They can be regarded as the "themes" which underlie all the surface permutations and from which various "principled" departures are made. These three basic patterns are as follows:

3 3 3 1

2 2 2 1

1 1 1 1

In addition to the evidence drawn from purely mathematical (positional) rearrangements which I have discussed before, further support for my conclusion comes from two sources:

(i) examination of the patterns of first lines in the first four stanzas

(ii) occurrences of the rhythmical "themes" in all stanzas, except one which can be regarded as a transitional stanza (stanza V)

If we compare the first lines in these stanzas:

I	3 3 3 1
II	3 2 3 1
III	2 2 3 1
IV	2 2 2 1

we see a progressive numerical diminution which leads from pattern 3 3 3 1 to pattern 2 2 2 1. The initial pattern 3 3 3 1 is gradually transformed into 2 2 2 1, first by a change involving the subtraction of one element (-1) i.e. 3 2 3 1, then by a change involving the subtraction of another element (-1), (-1) i.e. 2 2 3 1, until the second basic or "thematic" pattern is reached as a result of a further subtraction (-1), (-1), (-1) i.e. 2 2 2 1 from the first pattern. The third basic pattern is analogical to the second in that it involves the same subtraction of three elements from the preceding pattern (-1), (-1), (-1), 2 2 2 1 1 1 1 1.

These "thematic" patterns are to be found throughout the whole poem, in stanzas:

I	3 3 3 1	line 1
II	1 1 1 1	4
III	2 2 2 1	4
IV	2 2 2 1	1, 2, 3
V	——	
VI	1 1 1 1	1
	3 3 3 1	2
VII	2 2 2 1	2
VIII	2 2 2 1	1, 2
IX	2 2 2 1	2
	1 1 1 1	4

They occur either in isolation, or are repeated (three times in stanza IV, twice in stanza VIII), or in combination as in stanza VI and IX. It may be pointed out in this connection that the combined patterns are in the first case: in stanza VII 1 1 1 1 co-occurring with

3 3 3 1 and in stanza IX 2 2 2 1 co-occurring with 1 1 1 1, thus all three rhythmical themes are brought to bear on one another - perhaps one more proof in support of the suggestion that these three patterns should be regarded as basic.

Looking at the Progress of First Lines we can make the following observations:

I	3 3 3 1	3 x 3	2 x 0
II	3 2 3 1	3 x 2	2 x 1
III	2 2 3 1	3 x 1	2 x 2
IV	2 2 2 1	3 x 0	2 x 3
V	2 3 2 1	3 x 1	2 x 2
VI	1 1 1 1	3 x 0	2 x 0
		1 x 3	
VII	2 3 2 1	3 x 1	2 x 2
VIII	2 2 2 1	3 x 0	2 x 3
IX	3 2 2 1	3 x 1	2 x 2

It can be seen that the lines in the two stanzas following stanza VI are a mirror image of the lines in the two stanzas preceding stanza VI. Similarly, there seems to be a kind of reversal between stanzas II, V and VII: 3 2 3 1 versus 2 3 2 1; and stanzas III and IX: 2 2 3 1 versus 3 2 2 1.

Thematic patterns appear stanza-initially only in stanzas I, IV, VI and VIII.

The complete patterning of the stanzas runs as follows:

I 3 3 3 1
2 2 3 1
1 2 2 2
2 3 2 1

II	3	2	3	1
	2	3	2	1
	2	3	2	1
	1	1	1	1
III	2	2	3	1
	3	2	2	1
	2	2	1	2
	2	2	2	1
IV	2	2	2	1
	2	2	2	1
	2	2	2	1
	3	3	2	1
V	2	3	2	1
	2	3	2	1
	1	1	2	2
	2	3	2	1
VI	1	1	1	1
	3	3	3	1
	3	3	3	2
	2	2	3	1
VII	2	3	2	1
	2	2	2	1
	3	3	2	1
	3	3	2	1
VIII	2	2	2	1
	2	2	2	1
	3	3	2	2
	2	3	2	1
IX	3	2	2	1
	2	2	2	1
	2	3	2	1
	1	1	1	1

I have now discussed most of the principles behind the arrangements and the actual grouping in the stanzas reflects them all. In addition to repetition, either of the basic patterns or of their derivations, in sequence or at a distance, there is to be found reversal, positional or numerical. These suffice to bind together the less related patterns of the foot pattern.

After a purely mathematical exposition of the numerical patterning, I should like to return to the poem and illustrate with textual evidence, the points raised by grouping all the patterns round their respective basic patterns.

Lines exemplifying all the numerical patterns discerned in the poem:

Basic Pattern:

3 3 3 1		|anyone| lived in a | pretty how | town			I,1
	(and	|only the| snow can be|gin to ex|plain			VI,2

Modifications:

3 3 3 2	How	|children are| apt to for|get to re|member			VI,3
3 3 2 1		|anyone's| any was | all to | her			IV,4
		|busy folk| buried them |side by| side			VII,3
		|little by| little and | was by | was			VII,4
3 2 3 1		|women and|men (both | little and|small)			II,1
3 2 2 1		|women and| men (both | dong and |ding			IX,1
		|down they for|got as | up they | grew			III,2
2 2 3 1	with|	up so |floating| many bells | down		I,2;	VI,4
		|children| guessed but | only a | few			III,1

Modifications:

2 3 2 1	he	|sang his| didn't he | danced his| did	I,4
	they	|sowed their| isn't they |reaped their|same	II,3
		| cared for | anyone | not at | all	II,2
		|someones| married their |every|ones	V,1
		|laughed their|cryings and|did their|dance	V,2
		|said their|nevers they| slept their |dream	V,4
		|one day| anyone | died I | guess	VII,1
		|wish by| spirit and | if by | yes	VIII,4
		|reaped their|sowing and| went their|came	IX,3
3 3 2 2		|noone and| anyone | earth by | april	VIII,3

Basic Pattern:

2 2 2 1	that	|noone | loved him | more by | more	III,4
		|when by | now and | tree by | leaf	IV,1
	she	|laughed his| joy she | cried his| grief	IV,2
		|bird by | snow and | stir by | still	IV,3
	(and	|noone | stooped to | kiss his | face	VII,2
		|all by | all and | deep by | deep	VIII,1
	and	|more by| more they| dream their | sleep	VIII,2
		|summer | autumn | winter | spring	IX,2

Modifications:

1 2 2 2		|spring | summer | autumn | winter	I,3
2 2 1 2		|autumn | winter | spring | summer	III,3
1 1 2 2		| (sleep | wake | hope and | then) they	V,3

Basic Pattern:

1 1 1 1	sun	moon	stars	rain	II,4; IX,4
	stars	rain	sun	moon	VI,1

Patterns with and without Reinforcement.

In addition to being similar in terms of number of syllables per foot, patterns can be further reinforced on the syntactic, semantic/lexical, rhyme or quantity pattern levels. Different selections can be made from these levels in terms of their number and combinations, which I now propose to illustrate using examples of pattern 2 3 2 1.

he	sang his	didn't he	danced his	did	I,4
they	sowed their	isn't they	reaped their	same	II,3
	laughed their	cryings and	did their	dance	V,2
	reaped their	sowing and	went their	came	IX,3
they	said their	nevers they	slept their	dream	V,4

All these examples share one feature : an underlying syntactic structure. In addition to this, they may display parallelism and identity with respect to other features and it is on the basis of changing emphasis that I have regrouped them further.

I	they	sowed their	isn't they	reaped their	same
	he	sang his	didn't he	danced his	did
II	they	sowed their	isn't they	reaped their	same
		reaped their	sowing and	went their	came
III		reaped their	sowing and	went their	came
		laughed their	cryings and	did their	dance
IV		laughed their	cryings and	did their	dance
	he	sang his	didn't he	danced his	did
V		said their	nevers they	slept their	dream
	they	sowed their	isn't they	reaped their	same

These new groupings exemplify the intricate network of cross-reference in the five lines originally selected on the basis of their syntactic similarity. Each combination emphasises a new correspondence or a different set of correspondences on the grammatical, phonological (syllable quantity pattern), phonaesthetic (rhyme) and lexical or semantic level.

Group I.

Correspondence:

Identity of: (+Parallelism +Identity)

a) Grammatical form : isn't (if Tense left out of consideration) didn't

b) Grammatical function of the above; their, his

c) Quantity pattern

Parallelism: a) Grammatical form : their
(+Parallelism his
-Identity)

Non-Correspondence: a) Lexical form : their
his

b) Phonaesthetic (rhyme): ∅

Group II

Correspondence:

Identity: a) Lexical form : their
their

b) Phonaesthetic (rhyme): Perfect

c) Grammatical function: isn't ; their
sowing ; their

Parallelism: a) Semantic cross-correspondence sowed/sowing/reaped

Non-Correspondence: a) Grammatical form : isn't
sowing

b) Quantity : Imperfect (2nd foot Modified)

Group III

Correspondence:

Identity: a) Grammatical form: sowing ; and
cryings ; and (Number omitted)

b) Grammatical function: of the above

c) Quantity pattern

Parallelism: -

Non-Correspondence: a) Rhyme : ø

Group IV

Correspondence

Identity: a) Grammatical function : cryings ; their

didn't ; his

Parallelism: a) Grammatical form: their, his

ing -Neg "cryings"

Neg -ing "didn't"

Non-Correspondence: a) Quantity : Imperfect (2nd foot Modified)

b) Rhyme : ø

Group V

Correspondence: a) Grammatical function : their ; nevers

Identity: their ; isn't

b) Grammatical form: their ;

their

c) Lexical form: their

their

d) Quantity pattern

Parallelism a) Semantic: Negative ; Juxtaposition Negative/Positive

"nevers"

"isn't"

Non-Correspondence: a) Grammatical form: nevers

isn't

b) Rhyme

Reinforcement can also be seen among patterns in the 2 2 2 1 group, although it is no longer on the level of sentence but only of phrase with varying degrees of correspondence on the level of form-class and lexical form:

| when by | now and | tree by | leaf IV,1

| bird by | snow and | stir by | still IV,3

| all by | all and | deep by | deep VIII ,1

Patterns without Reinforcement.

Patterns included in the same group on the basis of syllable count (per foot) but without any further linking devices do not seem to be readily perceived as related, not to the same degree as the ones with reinforcement. This can be easily checked by comparison with the other patterns from group 2 3 2 1, and group 2 2 2 1.

2 3 2 1

| cared for | anyone | not at| all

| someones | married their | every|ones

| one day | anyone | died I | guess

| wish by | spirit and | if by | yes

2 2 2 1

that | noone | loved him | more by | more

and | noone | stooped to | kiss his | face

and | more by | more they | dream their | sleep

| summer | autumn | winter | spring

There are, however, cross-correspondences to be traced either on the level of phrase (e.g. repetition) or on the level of semantics (reversal). On the level of phrase there are numerous parallelisms which fall into two groups:

i) +Identity of Grammatical Form - Identity of Lexical Form

ii) +Identity of Grammatical Form +Identity of Lexical Form

Examples: (i) Juxtapositions:

when by now tree by leaf bird by snow earth by

stir by still April

(ii) was by was

side by side

little by little

more by more

all by all

deep by deep

Cross-correspondence with Lexical and Grammatical Identity of Phrase can be seen in:

that | noone | loved him | more by | more

and | more by | more they | dream their | sleep

Only the place of occurrence of the phrase is altered from the last two feet (positions III, IV) to the first two feet (positions I, II) - a pattern already familiar to us from the earlier analysis of the Refrains : A B C D → C D A B ; now modified further: A B C D → C D E F

It is interesting to note how much of the incantatory effect would be lost if this permutation did not take place, cf:

that | noone | loved him | more by | more

they | dream their | sleep | more by | more

Cross-correspondences on the level of Semantics (as different from ± Identity of Lexical Form) are equally numerous and essential to the meaning of the poem:

he | sang his | didn't he | danced his | did

(they)| said their | nevers they | slept their | dream

she | laughed his | joy she | cried his | grief

(everyones) | laughed their | cryings and | did their | dance

(they)| said their | nevers they | slept their | dream

and| more by | more they | dream their | sleep

While "anyone" sang his "didn't" they (the "everyones") said their "nevers". It is also interesting to note in this context that, although both express a negation, "nevers" does not collocate with "sang" but with "said" : the idiosyncratic (or deviant from Standard Grammar) "didn't" is selected to collocate with "anyone's" action. While "anyone" "danced his did", they (the "everyones") "did their dance" - again the standard grammar and collocation is reserved for the ordinary "everyones" and the idiosyncratic collocation, expressing a reversed attitude and action, is reserved for "anyone" in the poem.

While she ("noone") "laughed his joy she cried his grief", they

(the "everyones") "laughed their cryings" - the reversal of attitude characterizes the other party now; while "noone" shows sympathy, sensitivity and understanding, the "everyones" lack these qualities.

While "everyones" "slept their dream","noone" and "anyone" "dream their sleep" - perhaps the most culminating point in the series: the whole meaning and structure of the poem are based on Reversal and Juxtaposition.

B. Line-End Markers.

After having dealt with the stanza and the line, I now wish to concentrate on a smaller unit of verse structure, the line-end markers. These usually consist of the last foot and the one preceding it and play an important part in delimiting the line as a unit. I shall describe them in terms of their quantity patterns, using the syllable quantity rules developed in the Phonetics Department at Edinburgh University.[1]

List of all line-end markers with their quantity patterns:

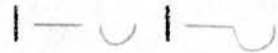
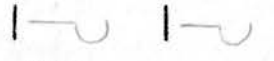
Stanza	Text	Quantity Pattern
I	in a | pretty how | town	|U⌒⌣ |—⌣
	| many bells | down	|U⌒⌣ |—⌣
	| autumn | winter |	|⌒ ⌒ |⌒ ⌒
	he | danced his | did	|— ⌣ |—⌣

1. Two-syllable feet according to D. Abercrombie, "Syllable Quantity and Enclitics in English", paper given at the meeting of the Linguistic Association (Great Britain) at Hull in May, 1961, and published in In Honour of Daniel Jones, London (Longman), 1964; also in Studies in Phonetics and Linguistics, Oxford (O.U.P), 1965.

   Three-syllable feet according to M. Sumera, "Some Aspects of Rhythm and Verse Structure in English", M.Litt. thesis, Edinburgh University, 1966.

   Pattern |U⌒⌣ | is to be regarded as an exaggeration owing to the constraints of the system adopted, cf. ibid. chapter III, section 'Some Problems of Analysis'.

Stanza	Text	Quantity Pattern
II	both | little and | small	| ∪ ∩ ∪ | – ∪
	| not at | all	| – ∪ | – ∪
	they | reaped their | same	| – ∪ | – ∪
	| stars | rain |	| – ∪ | – ∪
III	but | only a | few	| ∪ ∩ ∪ | – ∪
	as | up they | grew	| – ∪ | – ∪
	| spring | summer	| – ∪ | ∪ –
	| more by | more	| – ∪ | – ∪
IV	and | tree by | leaf	| – ∪ | – ∪
	she | cried his | grief	| – ∪ | – ∪
	and | stir by | still	| – ∪ | – ∪
	was | all to | her	| – ∪ | – ∪
V	their | every | ones	| ∩ ∩ | – ∪
	and | did their | dance	| – ∪ | – ∪
	| hope and | then they	| – ∪ | – ∪
	they | slept their | dream	| – ∪ | – ∪
VI	| sun | moon	| – ∪ | – ∪
	can be- |gin to ex-|plain	| ∩ m | – ∪
	to for- |get to re-|member	| ∩ m | ∩ ∩
	| many bells | down	| ∪ ∩ ∪ | – ∪

Stanza	Text	Quantity Pattern
VII	| died I | guess	
	to | kiss his | face	
	| side by | side	
	and | was by | was	
VIII	and | deep by | deep	
	they | dream their | sleep	
	| earth by | April	
	and | if by | yes	
IX	both | dong and | ding	
	| winter | spring	
	and | went their | came	
	| stars | rain |	

Frequency Counts

total number of lines: 36

3 syllable line-end markers: 7

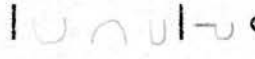
2 syllable line-end markers: 26 (four ending in a di-syllabic foot)

1 syllable line-end markers: 3

Three-syllable feet:

Four possible quantity patterns with word division:

4x

 once

once

modified once

Two-syllable feet:

A great variety of quantity patterns appear with and without word division, but | ⏑ – | is missing in penultimate position.

same pattern		20x
modified		once
		once
other patterns		2x
		once
		once

One-syllable feet:

		3x

Line-end Markers: Basic Patterns.

After examining all the quantity patterns in the line end-markers, I should like to suggest that the patterns represented in the first stanza be taken as the basic patterns from which all other modifications stem. These main patterns are:

I	
II	
III	

I shall indicate a quantity modification by placing the symbol M beside the pattern concerned, and a numerical modification by indicating in brackets the number of syllables added or subtracted.

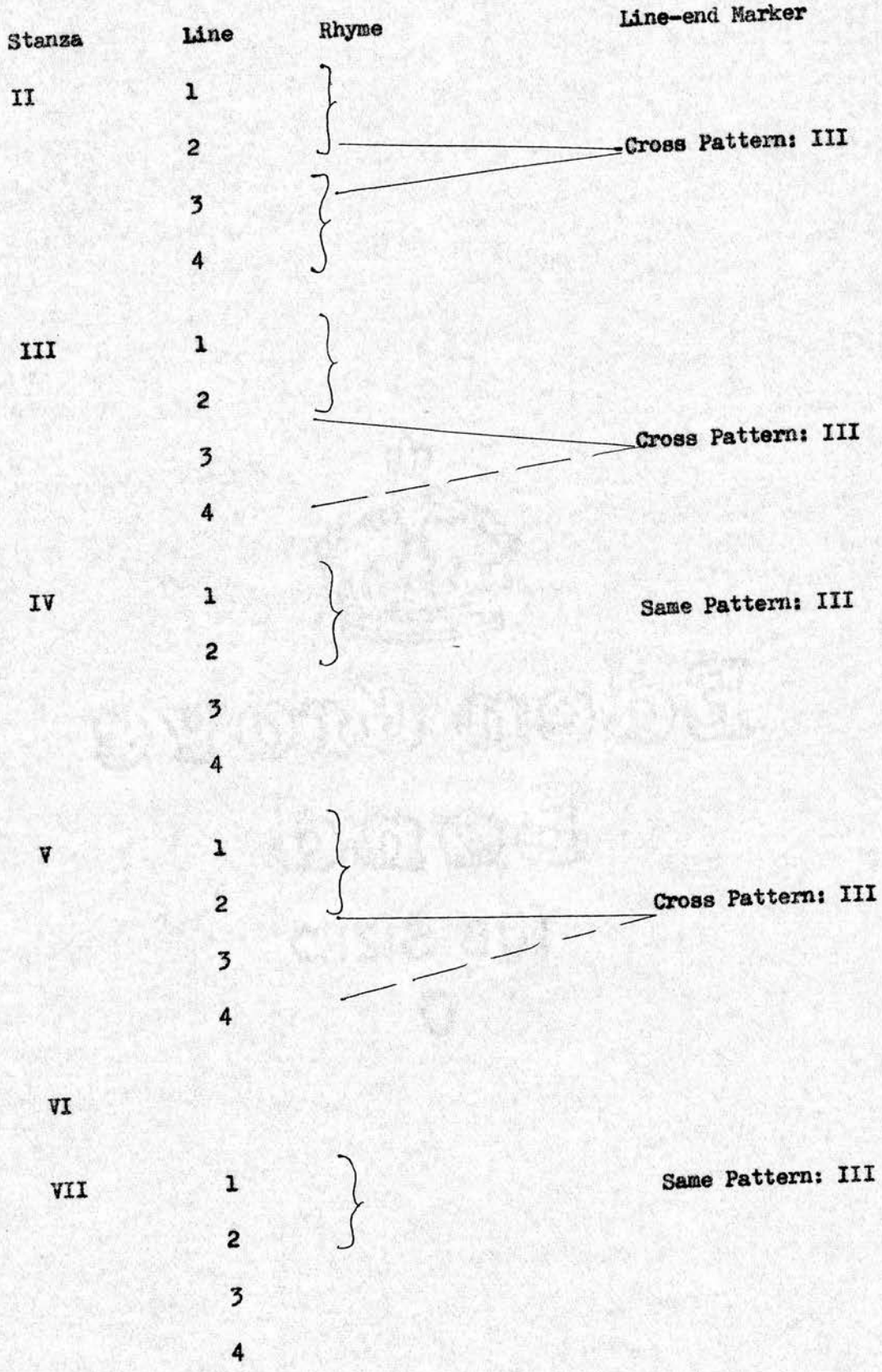
Structural combinations of these patterns in the course of the poem:

Stanza	Line	Pattern No	
I	1	I	Exact Repetition 2x
	2	I	
	3	II	
	4	III	
II	1	I	
	2	III	Exact Repetition 2x
	3	III	
	4	III (-1)	
III	1	I/M	
	2	III	Exact Repetition 2x
	3	III/M (-1) (+1)	
	4	III	
IV	1	III	Exact Repetition 4x
	2	III	
	3	III	
	4	III	
V	1	III/M or II (-1)	
	2	III	Exact Repetition 2x
	3	III (+1)	
	4	III	

Stanza	Line	Pattern No	
VI	1	III (-1)	
	2	I/M	Modified Repetition 2x
	3	I/M (+1)	
	4	I	
VII	1	III	Exact Repetition 4x
	2	III	
	3	III	
	4	III	
VIII	1	III	Exact Repetition 3x
	2	III	
	3	III (+1)	
	4	III	
IX	1	III	Exact Repetition 2x
	2	II (-1) or III/M	
	3	III	
	4	III (-1)	

Line-end Markers in Relation to Rhyme:

Stanza	Line	Rhyme	Line-end Marker
I	1		Same pattern: I
	2		
	3		
	4		


Stanza
Line
Rhyme
Line-end Marker
II
1
2
3
4
Cross Pattern: III
III
1
2
3
4
Cross Pattern: III
IV
1
2
3
4
Same Pattern: III
V
1
2
3
4
Cross Pattern: III
VI
VII
1
2
3
4
Same Pattern: III

Stanza	Line	Rhyme	Line-end Marker
VIII	1	}	Same Pattern: III
	2	}	
	3		
	4		
IX	1	}	
	2	}	Cross Pattern: III
	3	}	
	4	}	

Rhyme and exact repetition of quantity pattern within the line-end markers appear simultaneously four times (marked }); complete Cross Patterns occur twice (marked ><); partial Cross Patterns (marked >--) twice also. One stanza (VI) remains, without a rhyme, outside this scheme.

C. Rhythmic movement.

Rhythmic movement results from changes in the number of syllables per foot, or feet per line, and from changes in the quantity patterns inside the feet. Modifications affecting syllable or foot count will be referred to as Numerical, those affecting quantity patterns as Quantitative. Following the terminology adopted in my M.Litt thesis, I shall call those modifications which take place inside a foot (whether numerical or quantitative) Internal, and those which affect a succession of feet (either by Expansion or Contraction, i.e. addition or subtraction of one or more feet) External.

The poem under analysis shows no External Modifications: all lines contain an equal number of feet. The possibility of modifications being so drastically reduced, a heavier burden is put on Internal Modifications. It remains to be determined whether the main emphasis is shifted on to the numerical or the quantitative modifications, and what types of modification appear within them.

Numerical Modifications in each stanza.

Stanza:	Line:	Pattern:	
I	I	3 3 3 1	3 3 3 1
	II	2 2 3 1	2 2 3 1
	III	1 2 2 2	1 2 2 2
	IV	2 3 2 1	2 3 2 1

Lines I - II:

from	3	3	3	1		3	3	3	1
to	2	2	3	1		(-1)	(-1)	0	0
						2	2	3	1

Reduction in number of syllables per foot by (-1) (-1) i.e. two elements[1] are affected simultaneously by the change.

Although the progress of first lines (see pp.) shows a gradual diminution by one sub-element (-1) in the Stanza Progression: internal changes within a stanza are initiated by a change involving two consecutive elements (-1) (-1). This somewhat sharp change is balanced by the Exact Repetition of the two Line-end Markers.

Lines II - III:

from	2	2	3	1		2	2	3	1
to	1	2	2	2		(-1)	0	(-1)	(+1)
						1	2	2	2

Three elements are affected simultaneously but the change is not homogenous. As in the previous case, two elements are modified in the same direction, e.i. (-1), (-1), but not in a consecutive order. Here they are separated by an element whose identity has remained unchanged:

2	2	3	1
(-1)	0	(-1)	(+1)
1	2	2	2

1. The general term "element" used in this discussion of patterning corresponds to the foot, and "sub-element" to a syllable.

The third element affected shows direction change from (-) to (+), i.e. a sub-element is added to the initial pattern:

$$1 \xrightarrow[(+1)]{} 2 \qquad\qquad \begin{matrix} 2 & 2 & 3 & 1 \\ 1 & 2 & 2 & 2 \end{matrix}$$

Lines III - IV:

from	1	2	2	2	1	(+1)	2	(+1)	3	2	2	(-1)	1
to	2	3	2	1									

The same type of pattern is observed as in the transition from lines II - III, i.e. one element retains its identity and position, three other elements are changed. The change in the three elements (feet in the poem) consists of a unidirectional change of two elements and a change in the opposite direction of the third element.
In lines III - IV although the type of pattern is repeated, variation is introduced by the movement of the unidirectional elements: from (-) for the two elements in line III to (+) for the two unidirectional elements in line IV. Consequently, in keeping with this pattern, the polarity is reversed for the third element from (+) in the 3rd line to (-) in the 4th line. In addition, the identity element undergoes a Positional Shift from position II in line III to position III in line IV, and consequently the two unidirectional elements are similarly affected. (See above).

Considering the stanza as a whole, we notice further important features. The First vertical half of the stanza (i.e. the beginnings of the lines), shows a tendency to a pronounced, decisive modification by

two elements from the very start. The first modification by two consecutive elements involves a subtraction (-1) (-1).
The second modification by two consecutive elements, in the last two lines, involves an addition (+1) (+1). (Correspondingly, we can speak of internal modification of contraction and internal modification of expansion),

To counteract these progressive changes the remaining vertical half of the stanza, consisting of the Line-end Markers, shows a conservative tendency: in the first two lines an exact repetition, in the third and fourth, a repetition modified by the subtraction of one sub-element (-1) in the final position. This type of internal modification by ($\pm$1) reappears later in the poem as does the modification by two unidirectional elements ($\pm$1) ($\pm$1).

Stanza II	Line:	Pattern:	
	I	3 2 3 1	3 2 3 1
	II	2 3 2 1	2 3 2 1
	III	2 3 2 1	2 3 2 1
	IV	1 1 1 1	1 1 1 1

Lines I - II:

from	3 2 3 1	3	2	3 1
to	2 3 2 1	(-1)	(+1)	(-1) 0
		2	3	2 1

This is a similar type of pattern to the one in stanza I, lines II - III: two (-1) one (+1). Here it results in a reversal of the numerical character of the pattern. The group 2 3 in line II, may perhaps be regarded as a repetition, with a positional shift, of two elements: 2 3 in line I, but unless a more obvious repetition of this type can be traced in the poem, the suggestion cannot be insisted upon.

Lines II - III:

from	2	3	2	1
to	2	3	2	1

Exact Repetition not only of line-end markers but of the whole line as a unit.

Lines III - IV:

from	2	3	2	1		2		3		2		1
to	1	1	1	1		(-1)		$\overset{\frown}{(-1)(-1)}$		(-1)		0
						1		1		1		1

Three elements are changed as before, but this time the direction of change is uniform for all elements with "consequent" extended change (-1) (-1) for one of the elements: 3 → 1

Stanza III	Line:	Pattern:											
	I	2	2	3	1	2	2	3	1	2	2	3	1
	II	3	2	2	1	3	2	2	1	3	2	2	1
	III	2	2	1	2	2	2	1	2	2	2	1	2
	IV	2	2	2	1	2	2	2	1	2	2	2	1

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Lines I - II:

from	2	2	3	1		2	2	3	1
to	3	2	2	1		(+1)	0	(-1)	0

Only two elements are changed, but the change is not unidirectional, and it leads here to a positional shift: 2 2 3 1 → 3 2 2 1. The deep structure similarity with the initial modification in stanza I lies in the fact that both are changes by two elements; while the first modification was unidirectional and consecutive, in the second one the changes are in opposite directions and are positionally separated.

The last but one element (as before in stanza II, in an extended version) is used to begin the next line; in addition, the preceding elements are repeated, with a positional direction change; from before the element to after the element.

Lines II - III:

from	3	2	2	1		3	2	2	1
to	2	2	1	2		(-1)	0	(-1)	(+1)
						2	2	1	2

The same type of modification as in stanza I: two unidirectional changes, one in the opposite direction. Here we are dealing with a shift of three consecutive elements one position forward, 3 2 2 1 → 2 2 1 2, but unlike the preceding shift, it does not produce a pattern which sounds related.

Lines III - IV:

from	2	2	1	2		2	2	1	2
to	2	2	2	1		0	0	(+1)	(-1)
						2	2	2	1

The same type of change as in the same stanza in line II: a change by two elements in opposite directions. (This time it is contiguous). Repetition as in stanza I lines I - II, but shifted from the last two consecutive elements (Line-end Marker) to the first two consecutive elements, affecting a different numerical set (3 1, in stanza I; 2 2, in stanza III). In addition, there is a positional reversal of the remaining elements though their numerical character is kept identical: 1 2, 2 1 2 2 1 2

2 2 2 1

Stanza IV Line: Pattern:

I	2 2 2 1	2 2 2 1
II	2 2 2 1	2 2 2 1
III	2 2 2 1	2 2 2 1
IV	3 3 2 1	3 3 2 1

Lines: I - II
II - III
Exact Repetition, reinforcing 2nd Basic Pattern

Lines: III - IV

from	2	2	2	1		2	2	2	1
to	3	3	2	1		(+1)	(+1)	0	0
						3	3	2	1

A unidirectional change by two elements; the same type of pattern as in stanza I but with the direction reversed, and consequently the numerical character reversed (3 3 2 2 in stanza I, 2 2 3 3 in stanza IV).

Identity of the last two consecutive elements (line-end markers), exact repetition as in stanza I in the corresponding position, but numerical value different; decreased by (-1), one sub-element, 3 1 v. 2 1.

Stanza V	Line:	Pattern:	
	I	2 3 2 1	2 3 2 1
	II	2 3 2 1	2 3 2 1
	III	1 1 2 2	1 1 2 2
	IV	2 3 2 1	2 3 2 1

Lines I - II:

from	2	3	2	1
to	2	3	2	1

Exact repetition of the whole line as in the corresponding place in stanza IV, but one repetition fewer, i.e. two repetitions instead of three as in stanza IV.

Lines II - III:

from	2	3	2	1	2	3	2	1
to	1	1	2	2	(-1)	(-1)(-1)	0	(+1)
					1	1	2	2

Practically impossible to hear the relationship: a complicated change of two unidirectional elements, but one extended (-1) (-1), to comprise two sub-elements and a third element in opposite direction.

Lines III - IV:

from	1	1	2	2
to	2	3	2	1

The same principle applied in reverse direction, bringing a repetition of the previous line.

Stanza VI	Line:	Pattern:							
	I		1	1	1	1		1	1	1	1
	II		3	3	3	1		3	3	3	1
	III		3	3	3	2		3	3	3	2
	IV		2	2	3	1		2	2	3	1

Lines I - II:

from	1	1	1	1
to	3	3	3	1

The transitions may be better regarded as consisting of the Third Basic pattern followed by First Basic pattern, rather than:

	1	1	1	1
	$\overset{\frown}{(+1)(+1)}$	$\overset{\frown}{(+1)(+1)}$	$\overset{\frown}{(+1)(+1)}$	0
	3	3	3	1

Lines II - III:

from	3	3	3	1		3		3		3	1
to	3	3	3	2		0		0		0	(+1)
						3		3		3	2

Modification of extension by one sub-element; the remaining elements preserve their identity.

Lines III - IV:

from	3	3	3	2		3		3		3	2
to	2	2	3	1		(-1)		(-1)		0	(-1)
						2		2		3	1

The pattern is modified through a unidirectional change of three elements involving a subtraction; two of the elements are consecutive.

Stanza VII	Line:	Pattern:	
	I	2 3 2 1	2 3 2 1
	II	2 2 2 1	2 2 2 1
	III	3 3 2 1	3 3 2 1
	IV	3 3 2 1	3 3 2 1

Lines I - II:

from	2	3	2	1		2		3		2	1
to	2	2	2	1		0		(-1)		0	0
						2		2		2	1

The change here is by one sub-element only and involves a subtraction, while the remaining elements preserve their identity and position. The lines are reminiscent of the pattern combination in stanza I, lines III - IV, except that the succession of patterns is presented in reversed order and that the order within one pattern is reversed as well (I from first position to last position: 1 2 2 2 → 2 2 2 1).

Lines II - III:

from	2	2	2	1		2		2	2	1
to	3	3	2	1		(+1)		(+1)	0	0
						3		3	2	1

The change from line II - III involves the familiar pattern of unidirectional change (by addition here) of two elements with unaltered identity and position of the two remaining elements. An identical type of modification, with the direction reversed, involving a subtraction, was employed at the very beginning of the poem in the transition from line I to line II in stanza I:

I; I-II	3	3	3	1		VII; II-III	2	2	2	1
	2	2	3	1			3	3	2	1

The same pattern combination: 2 2 2 1 was used in stanza IV, lines III, IV. 3 3 2 1

Lines III - IV:

from	3	3	2	1
to	3	3	2	1

Exact repetition of the whole line, similar to that in stanza V where a slightly different pattern (2 3 2 1) is repeated in the first two lines, whereas the repetition here takes place in the last two lines.

Stanza VIII	Line:	Pattern:							
	I	2	2	2	1	2	2	2	1
	II	2	2	2	1	2	2	2	1
	III	3	3	2	2	3	3	2	2
	IV	2	3	2	1	2	3	2	1

Lines I - II:

from	2	2	2	1
to	2	2	2	1

Exact repetition as in the previous cases of 2 3 2 1 and 3 3 2 1.

Lines II - III:

from	2	2	2	1	2	2	2	1
to	3	3	2	2	(+1)	(+1)	0	(+1)
					3	3	2	2

A unidirectional change involving three elements with a resulting balanced pattern 3 3 2 2 which is reminiscent of the pattern 1 1 2 2 in stanza V line III.

Lines III - IV:

from	3	3	2	2	3	3	2	2
to	2	3	2	1	(-1)	0	0	(-1)
					2	3	2	1

A unidirectional change by two sub-elements involving a subtraction; the two middle elements remain unchanged. (The patterns can be heard as related).

Stanza IX	Line:	Pattern:							
	I	3	2	2	1	3	2	2	1
	II	2	2	2	1	2	2	2	1
	III	2	3	2	1	2	3	2	1
	IV	1	1	1	1	1	1	1	1

Lines I - II:

from	3	2	2	1	3	2	2	1
to	2	2	2	1	(-1)	0	0	0
					2	2	2	1

A change by one sub-element only (subtraction), the remaining elements preserving their identity and position.

Lines II - III:

from	2	2	2	1	2	2	2	1
to	2	3	2	1	0	(+1)	0	0
					2	3	2	1

A change by one sub-element only (addition), partial repetition involving Line-end Marker. As in many previous cases the element preceding the last one is repeated at the beginning of the next line.

Lines III - IV:

from	2	3	2	1	2	3	2	1
to	1	1	1	1	(-1)	(-1)(-1)	(-1)	0
					1	1	1	1

The transition here should perhaps be viewed as a return to the Third Basic pattern; though the complicated change is not altogether unfamiliar. We had an example of this type of change, in fact an

identical change involving the same numerical elements, in stanza II lines III - IV. The Third Basic pattern is certainly best suited to be the ending pattern, giving a sense of completion and finality.

Modifications: Structural Typology.

I wish to summarize the numerical modifications affecting the rhythmic movement by arranging them according to certain structural principles, and grouping them into different "deep structure" types.

Change by one sub-element (±1):

(+1): stanza VI, line III

from	3	3	3	1	(and	only the	snow can be	gin to ex	plain
to	3	3	3	2	how	children are	apt to for	get to re	member

stanza IX, line III

from	2	2	2	1		summer	autumn	winter	spring
to	2	3	2	1		reaped their	sowing and	went their	came

The first example of Modification by one sub-element (expansion) is reinforced by identical quantity pattern in both lines; the second example lacks such reinforcement. The difference is readily perceptible to the ear.

(-1): stanza VII, line II

0 (-1) 0 0

from 2 3 2 1 | one day | anyone | died I | guess

to 2 2 2 1 (and | noone | stooped to | kiss his|face

stanza IX, line II

(-1) 0 0 0

from 3 2 2 1 |women and|men (both|dong and | ding)

to 2 2 2 1 | summer | autumn | winter | spring

As in the preceding case, the first example shows reinforcement by the quantity pattern, the second example lacks such support.

Change in two elements: ($\pm$1) ($\pm$1); (+1) (-1) (*(-1) (+1))

(-1)(-1): stanza I, line II

(-1)(-1) 0 0

from 3 3 3 1 |anyone| lived in a |pretty how | town

to 2 2 3 1 (with| up so| floating| many bells| down

stanza VIII, line IV

(-1) 0 0 (-1)

from 3 3 2 2 |noone and | anyone| earth by | april

to 2 3 2 1 |wish by | spirit and | if by | yes

Reversed Polarity:

(+1) (+1):stanza IV, line IV

(+1) (+1) 0 0

from 2 2 2 1 |bird by | snow and| stir by | still

to 3 3 2 1 |anyone's | any was | all to | her

stanza VII, line III

(+1) (+1) 0 0

from 2 2 2 1 and| noone |stooped to|kiss his|face

to 3 3 2 1 |busy folk| buried them|side by|side

These two examples are identical with respect to deep structure pattern,[1] positional arrangement of this pattern[2] (surface structure) and numerical realization of the pattern (surface structure), but differ with respect to quantity pattern inside some feet.

Contrastive Polarity:

(+1)(-1): stanza III, line II

(+1) 0 (-1) 0

from 2 2 3 1 |children|guessed (but| only a| few

to 3 2 2 1 and |down they for|got as|up they| grew

Same stanza, line IV

0 0 (+1) (-1)

from 2 2 1 2 | autumn | winter | spring | summer

to 2 2 2 1 that | noone |loved him | more by | more

The quantity patterns are nearly identical, helping to reinforce the modifications, yet the second example is less readily perceived as reinforced than the first. This may be due to the positional arrangement of the modifications, and to the fact that in the second example the identity of the Line-end Markers is disrupted as a result of a numerical as well as a quantity change.

(-1)(+1): This pattern does not appear in the poem.

1. In terms of type of modification involved; here (+1)(+1).
2. Both consecutive, referring to the first two positions in the pattern.

Change in three elements.

Unidirectional change for all three elements:

(+1)(+1)(+1): stanza VIII, line III

(+1) (+1) 0 (+1)

from 2 2 2 1 and|more by|more they|dream their|sleep

to 3 3 2 2 |noone and|anyone|earth by|april

Reverse pattern: (-1)(-1)(-1) is absent from the poem.

Unidirectional change for two elements, reversed polarity for the third element:

$(-1)(\overset{+}{-1})(\overset{-}{+1})$: stanza I, line III

(-1) 0 (-1) (+1)

from 2 2 3 1 (with|up so|floating|many bells|down

to 1 2 2 2 | spring | summer | autumn |winter

stanza II, line II

(-1) (+1) (-1) 0

from 3 2 3 1 women and|men (both|little and| small)

to 2 3 2 1 | cared for| anyone |not at | all

stanza III, line IV

(-1) 0 (-1) (+1)

from 3 2 2 1 | autumn | winter | spring| summer

to 2 2 1 2 that|noone|loved him|more by| more

The only modification which allows the patterns to be perceived as related is the one in the middle example, from stanza II. The remaining examples exhibit the same deep structure pattern and the

same surface positional pattern (though the surface numerical patterns are different), but they do not induce the same ready response. The reason could perhaps be sought in the positional factor, or the number and combination of quantity patterns, or the fact of having a 'blurred' line-end marker as a result of modifications in that area.

The remaining possible combinations do not appear in the poem:

(-1) (-1) (-1)

(+1) (-1) (-1)

(+1) (+1) (-1)

(+1) (-1) (+1)

(-1) (+1) (+1)

Change by four sub-elements (affecting only three elements)

Unidirectional change for all elements:

(-1) $(\widehat{-1})(-1)$ (-1): stanza II, line 4

from	2	3	2	1	they	sowed their	isn't they	reaped their	same
to	1	1	1	1		sun	moon	stars	rain

stanza IX, line IV

(-1) $(\widehat{-1})(-1)$ (-1) 0

from	2	3	2	1		reaped their	sowing and	went their	came
to	1	1	1	1		sun	moon	stars	rain

Unidirectional change for three sub-elements, reversed polarity for the fourth sub-element:

(-1) (-1)(-1) (+1): stanza V, line III

(-1) (-1)(-1) 0 (+1)

from 2 3 2 1 |laughed their|cryings and|did their|dance

to 1 1 2 2 |(sleep|wake| hope and|then) they

The relation between patterns here eludes perception.

Patterns omitted here.

(+1)	(-1)(-1)	(-1)
(+1)	(-1)(-1)	(+1)

(-1)(-1)	(+1)	(-1)
(-1)(-1)	(-1)	(+1)
(-1)(-1)	(-1)	(-1)
(-1)(-1)	(+1)	(+1)

(+1)	(-1)	(-1)(-1)
(-1)	(+1)	(-1)(-1)
(-1)	(-1)	(-1)(-1)
(+1)	(+1)	(-1)(-1)

All the above types of patterns display one feature in common, a gradual change by one sub-element: from the simplest change by one sub-element (whether contraction or expansion) through a change in two elements (with unidirectional or contrastive polarity) to a change in three elements, either all unidirectional or partially unidirectional with the third element displaying reversed polarity, and finally a complicated change in four elements; either

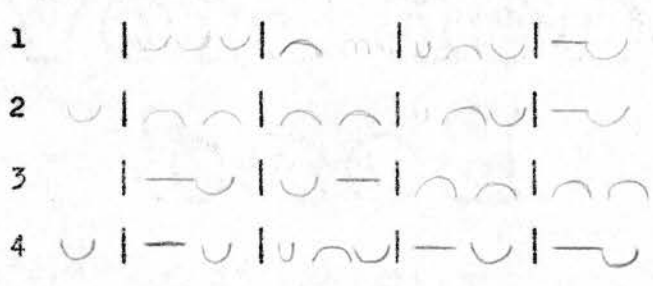
unidirectional, or again a variant of the same pattern with the number of unidirectional elements increased by one to comprise three elements, and one element in the opposite direction.

Perceptually, the patterns differ depending on whether they are reinforced by identical quantity patterns in the remaining unchanged sections, and whether certain positions in the pattern favour the impression of relatedness to the preceding pattern by not interfering too much with a sense of repetition and parallelism.

Quantitative Modifications.

After dealing with numerical modifications I wish to examine the quantity patterns which contribute to the rhythmic movement of the poem. I shall first present the quantity patterns for the whole poem and then discuss their various features.

Stanza I: [1]



1. For clarity of presentation, the final foot is not treated as line-divided. Anacrusis is adopted to simplify the notation. This does not appear to be a violation of the actual pattern since phonetically it tends to be ♩.. 𝅘𝅥𝅯 rather than ♩ ♪ in this particular position.

Stanza II: 1

2

3

4

Stanza III: 1

2

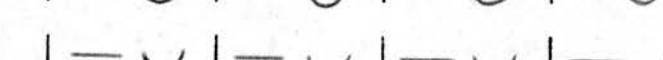
3

4

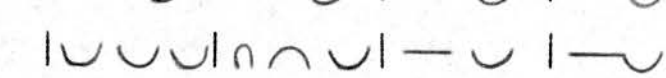
Stanza IV: 1

2

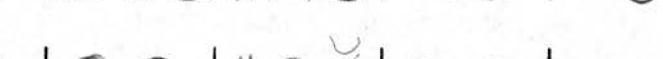
3



4

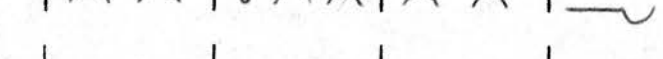


Stanza V: 1

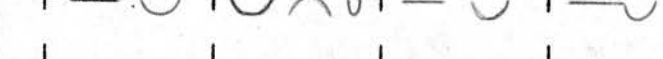


X cf p 69

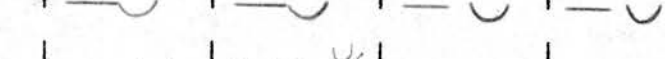
2



3



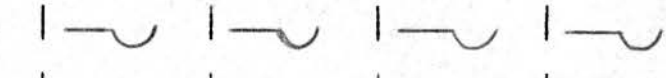
4



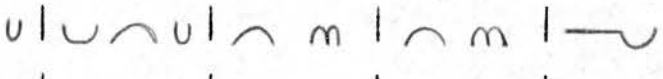
X cf p 69

Stanza VI: 1

2



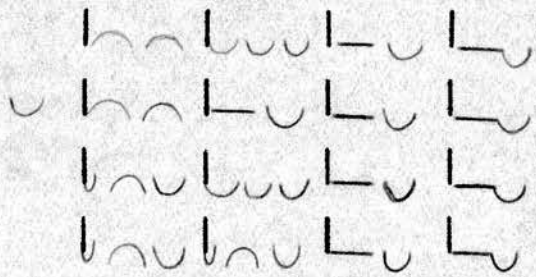
3



4

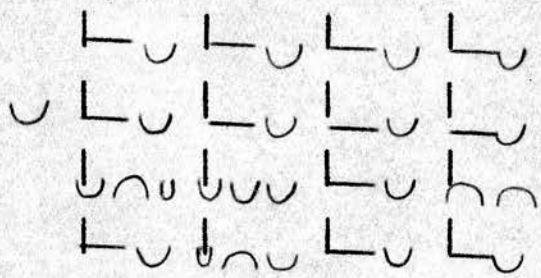
Stanza VII:

1
2
3
4



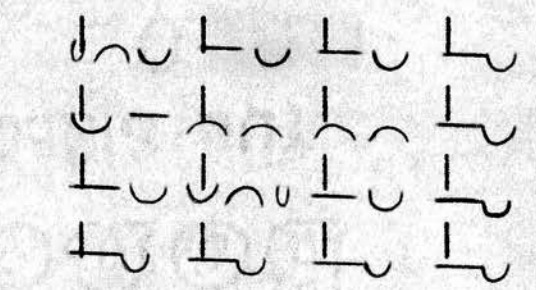
Stanza VIII:

1
2
3
4



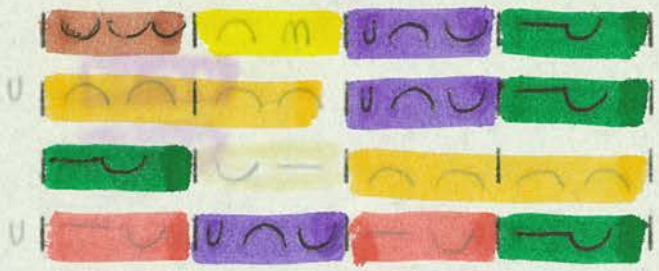
Stanza IX:

1
2
3
4



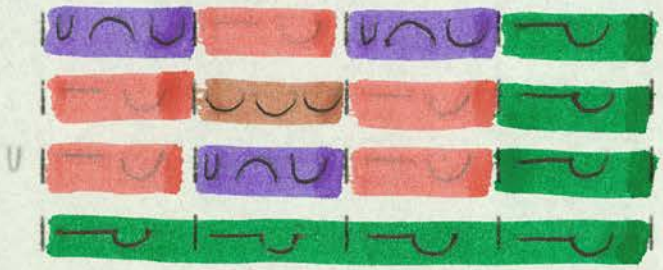
'Anyone lived...' - Foot Types; variation and repetition.

Stanza I



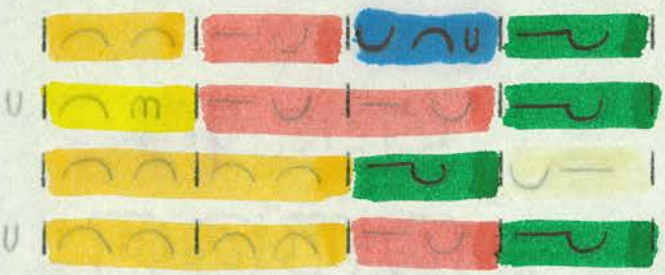
7 kinds

Stanza II



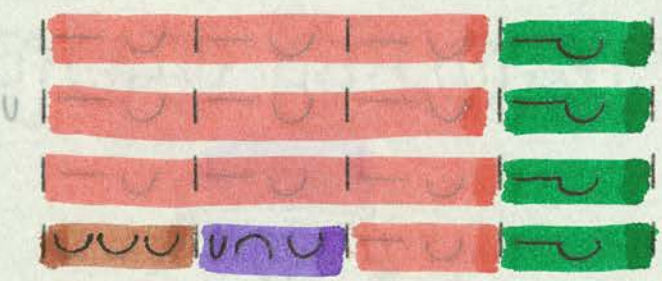
4 kinds

Stanza III



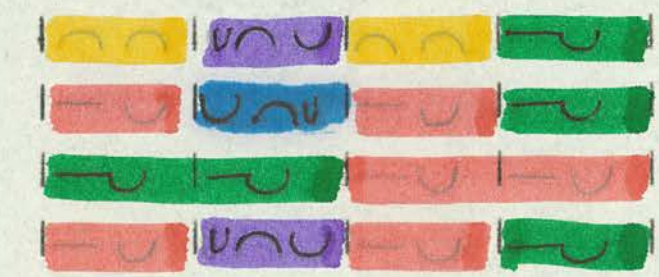
6 kinds

Stanza IV



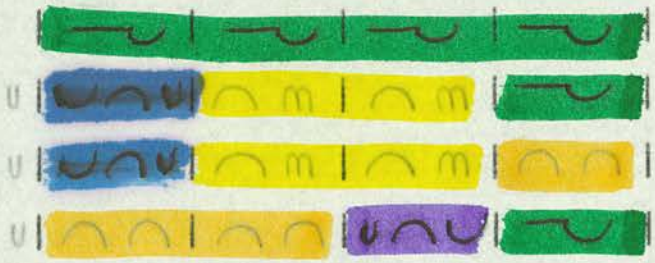
4 kinds

Stanza V



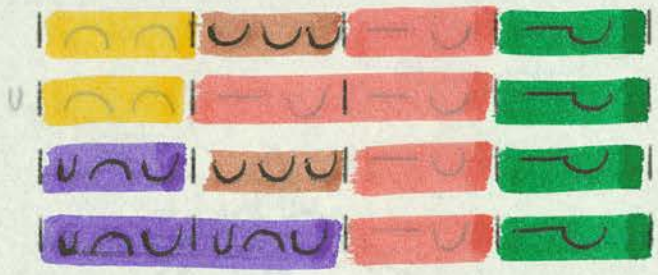
5 kinds

Stanza VI



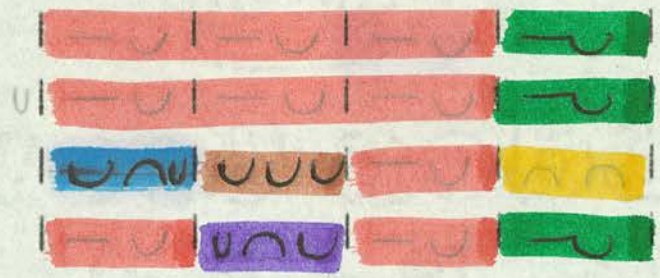
5 kinds

Stanza VII



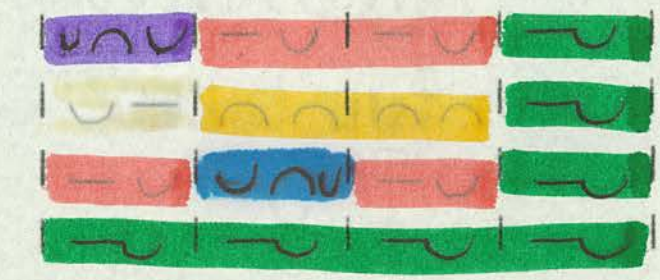
5 kinds

Stanza VIII



6 kinds

Stanza IX

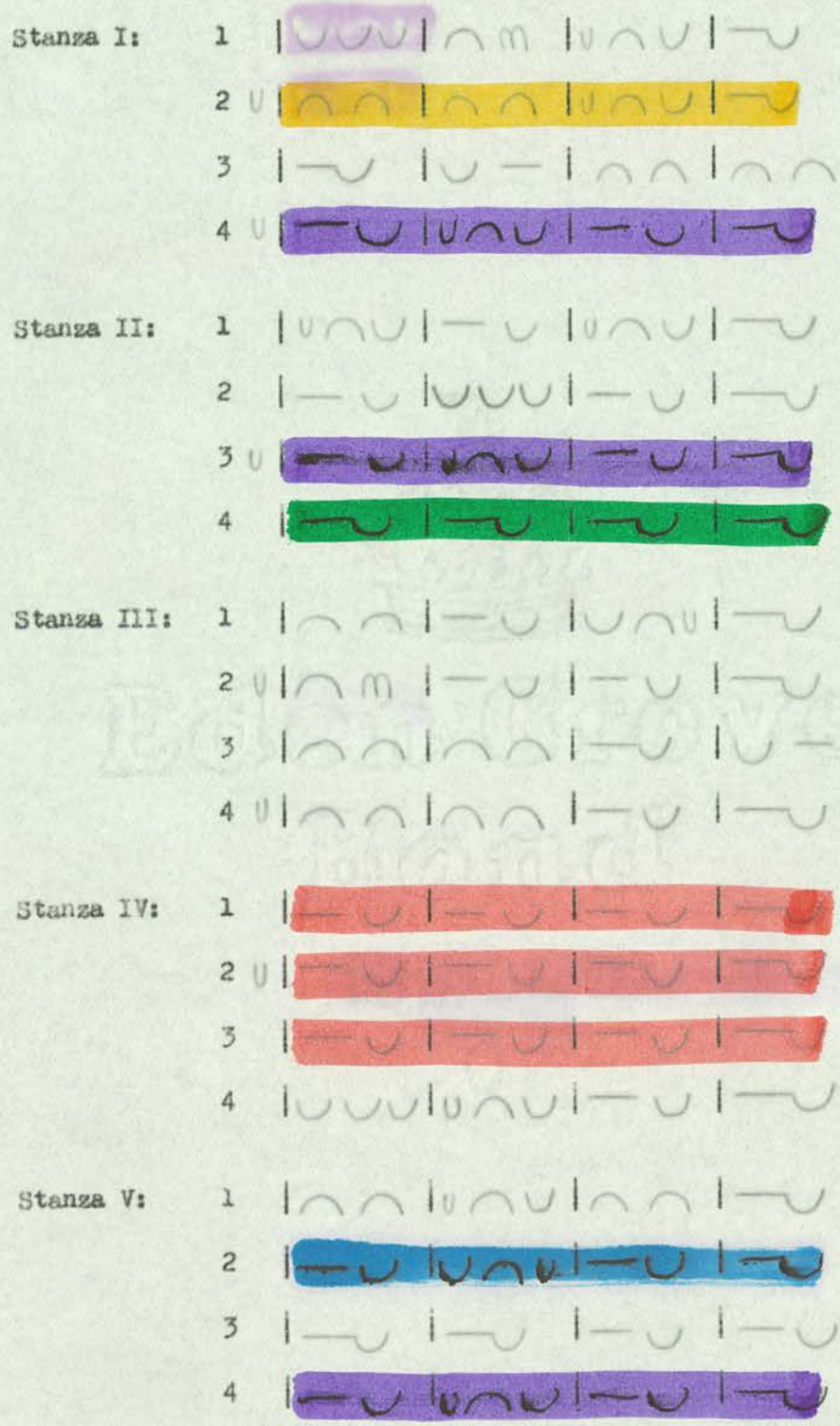


6 kinds

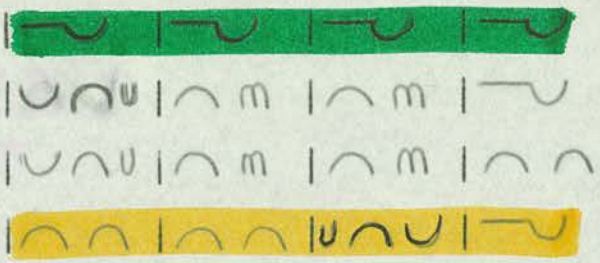
Frequency:

6 kinds - 3x
5 kinds - 3x
4 kinds - 2x
7 kinds - 1x

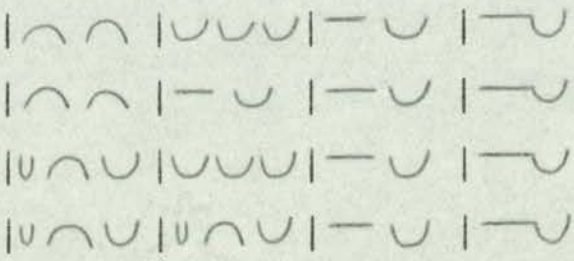
Line Repetition in 'anyone lived in a pretty how town'



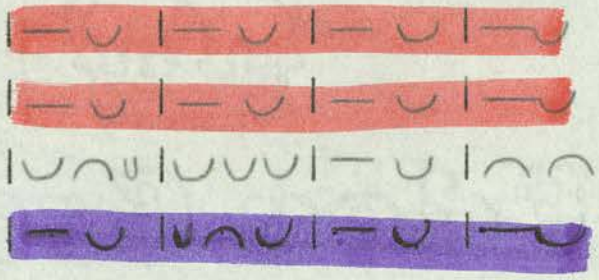
Stanza VI:



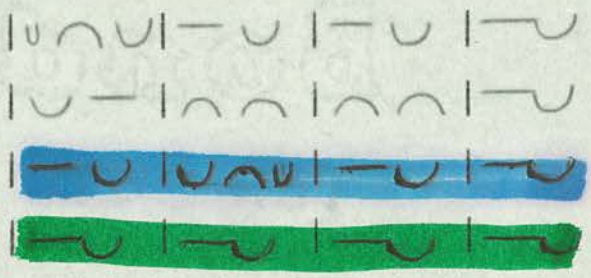
Stanza VII:



Stanza VIII:

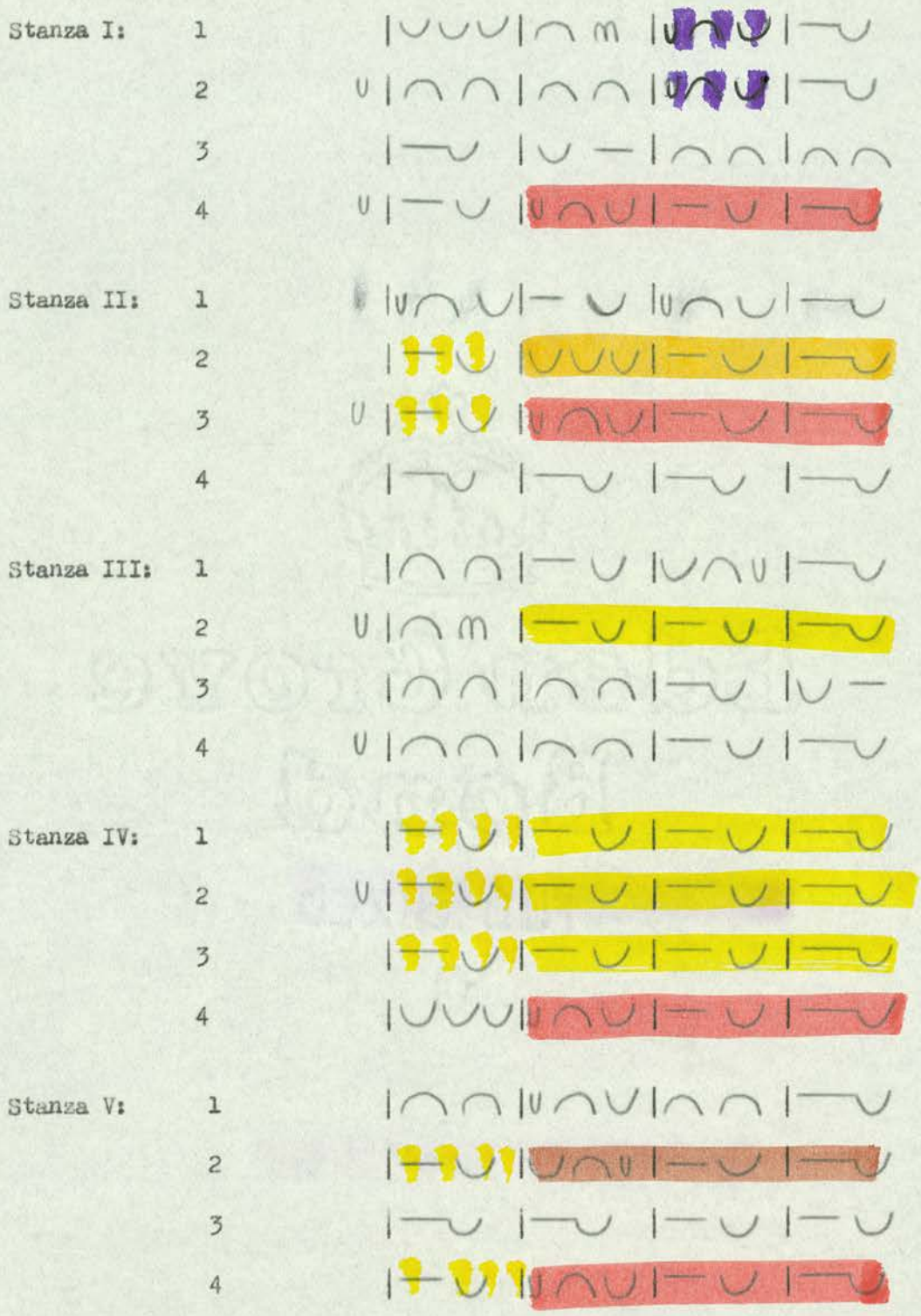


Stanza IX:



Sixteen lines out of the total of 36 are repetitions of an entire line. Two stanzas do not contain any repeated lines, two stanzas have three repetitions each, the remaining stanzas two repetitions each.

Partial repetition in 'anyone lived in a pretty how town'

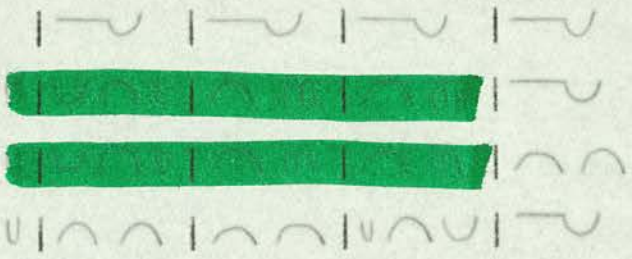


Stanza VI: 1

2

3

4

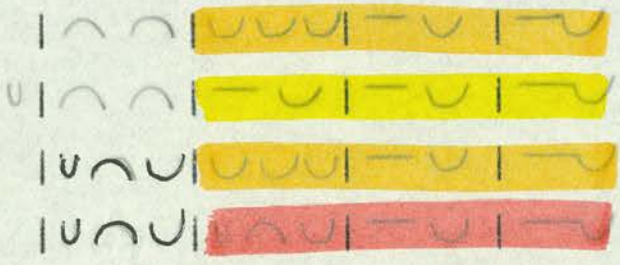


Stanza VII: 1

2

3

4

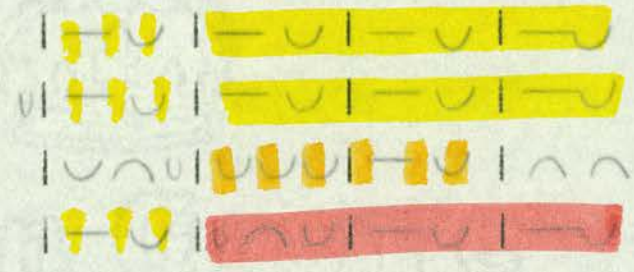


Stanza VIII: 1

2

3

4

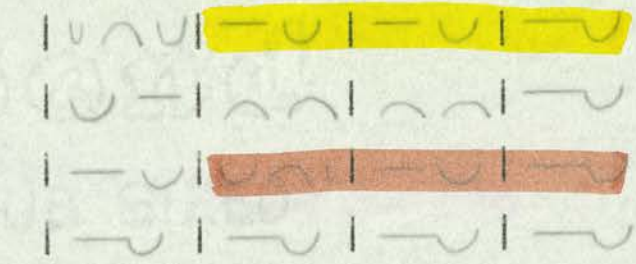


Stanza IX: 1

2

3

4



I shall now divide the repetitive quantity patterns (thus excluding patterns occurring only once like 3 3 2 2, 1 2 2 2, 2 2 1 2, 1 1 2 2) into four main groups and will then proceed to discuss their characteristic features. The first two groups consist of the two basic patterns (since the third one, being monosyllabic, does not enter into consideration here) : First Basic pattern 3 3 3 1 and Second Basic pattern 2 2 2 1. The remaining two groups are mixed, one containing two 3-syllable occurrences, and the other two 2-syllable occurrences.

Group I: First Basic pattern 3 3 3 1.

Stanza I; line 1 | anyone | lived in a | pretty how | town

Stanza VI; line 2 (and | only the | snow can be | gin to ex | plain

But 3 3 3 2

Stanza VI; line 3 how | children are | apt to for | get to re | member

Observations:

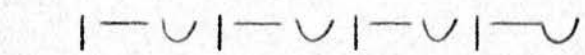
Only two occurrences of this pattern can be found in the poem. They have only one quantity pattern in common in their corresponding second foot: ⏜ ⏞

Group II: Second Basic pattern 2 2 2 1.

Stanza III; line 4

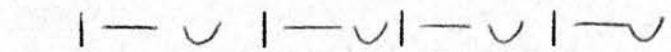
that | noone|loved him|more by| more

Stanza IV; line 1



|when by |now and |tree by| leaf

2



she |laughed his|joy she |cried his|grief

3

|bird by |snow and|stir by | still

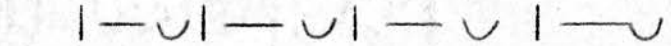
Stanza VII; line 2

(and |noone |stooped to|kiss his| face

Stanza VIII; line 1

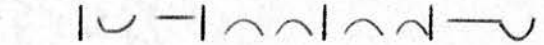
|all by |all and |deep by | deep

2



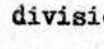
and |more by|more they|dream their| sleep

Stanza IX; line 2



| summer| autumn|winter| spring

Observations:

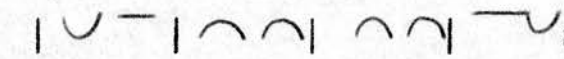
(i) several lines contain one type of quantity pattern for all three 2-syllable feet. This type is the quantity pattern which occurs with word division:  The fact that this particular pattern is most frequent is to be regarded as linguistically determined rather than the result of a special preference over the remaining options.

(ii) all three possible quantity patterns for 2-syllable feet are never found in one line.

(iii) two out of three 2-syllable feet contain the same pattern in one line.

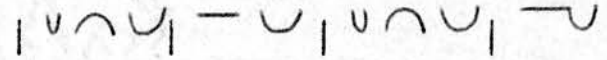
Ad i) Stanza IV,1,2,3; VIII, 1,2.

Ad iii) Stanza III, 4.

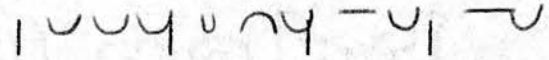
 Stanza IX, 2.

Stanza VII, 2.

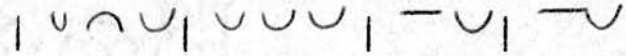
Group III, Mixed: two three-syllable feet in the pattern

Stanza II; line 1 

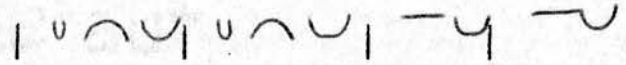
|Women and|men (both|little and| small)

Stanza IV; line 4 

|anyone's | any was| all to| her

Stanza VII; line 3 

| busy folk|buried them|side by | side

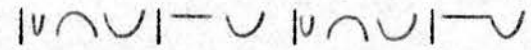
4 

| little by| little and| was by| was

Observations:

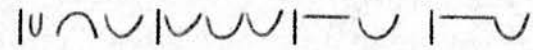
(i) two pairs of lines contain the same pattern, but modified positionally

(ii) one of the pairs has two different quantity patterns for the two three-syllable feet

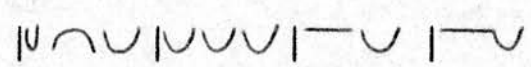
Ad i)  Stanza II, 1.

Stanza VII, 4.

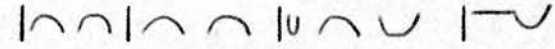
Stanza IV, 4.

 Stanza VII, 3.

Ad ii) Stanza IV, 4.

 Stanza VII, 3.

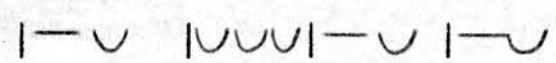
<u>Group IV, Mixed: two two-syllable feet in the pattern</u>.

Stanza I, line 2 

(with |up so |floating |many bells | down

4

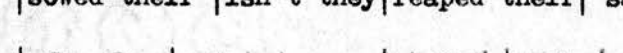
he |sang his| didn't he| danced his| did

Stanza II, line 2 

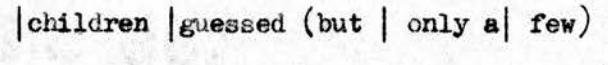
|cared for | anyone| not at | all

3

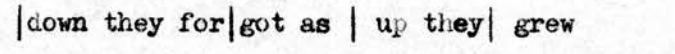
they |sowed their |isn't they|reaped their| same

Stanza III,line 1 

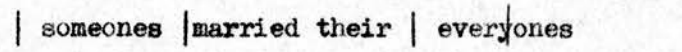
|children |guessed (but | only a| few)

2 

and |down they for|got as | up they| grew

Stanza V, line 1 

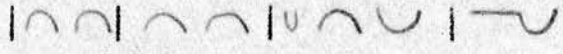
| someones |married their | everyones

2 

|laughed their |cryings and| did their| dance

Stanza V, line 4

|said their|nevers they|slept their|dream

Stanza VI,line 4 

with |up so | floating| many bells| down

Stanza VII,line 1

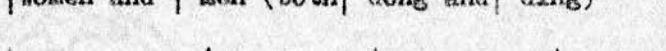
| one day |anyone| died I | guess

Stanza VIII,line 4

|wish by |spirit and|if by | yes

Stanza IX, line 1

|Women and | men (both| dong and| ding)

3 

|reaped their|sowing and| went their| came

Observations:

(i) all line patterns except two have the same quantity pattern for the two 2-syllable feet

(ii) all occurrences of | — ◡ | quantity pattern have the same pattern in the other 2-syllable foot, though with varying positional arrangement

(iii) several lines have the same quantity pattern throughout

(iv) the lines can have: (a) the same quantity pattern in both 2-syllable feet (same position) with varying pattern in the 3-syllable foot

(b) the same quantity pattern for the 3-syllable foot in each line, but different types in the respective lines for the two (same quantity pattern) 2-syllable feet

(c) the two exceptional cases with different patterns for the two 2-syllable feet in the line show a degree of relationship: both have the same quantity patterns in their respective 2-syllable feet, and differ in the patterns for their 3-syllable feet. In addition, the two 2-syllable feet are modified positionally

Ad (i)

Stanza I, line 2, 4

II, 2, 3

III, 2

V, 1, 2, 4

VI, 4

VIII, 4

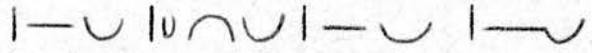
IX, 1, 3

Exceptions: Stanza III, line 1

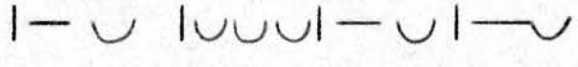
VII, 1

Ad (ii): <u>Same Positional arrangement of the two 2-syllable feet</u>

Positions I and III

Stanza I, line 4 

he |sang his|didn't he|danced his| did

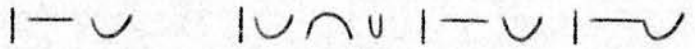
Stanza II, line 2 

| cared for| anyone | not at | all

3

they |sowed their|isn't they |reaped their| same

Stanza V, line 2



| laughed their|cryings and| did their| dance

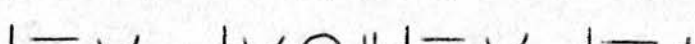
4

|said their |nevers and |slept their| dream

Stanza VIII,line 4

| wish by| spirit and| if by | yes

Stanza IX, line 3



| reaped their| sowing and| went their| came

<u>Positions II and III</u>

Stanza III, line 2

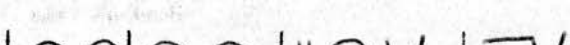
and |down they for|got as | up they| grew

Stanza IX, line 1

|Women and | men(both |dong and | ding)

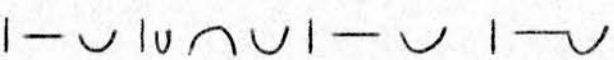
Ad (iii)

Stanza I, line 2



VI, 4 with |up so | floating| many bells| down

Stanza I, line 4



he |sang his| didn't he| danced his| did

II, 3

they |sowed their| isn't they|reaped their| same

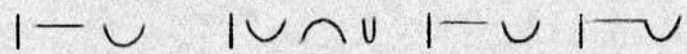
V, 4

|said their|nevers they|slept their| dream

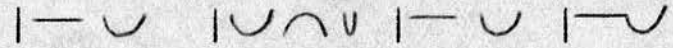
Stanza VIII, line 4

|wish by | spirit and| if by| yes

- - - - - - - -

Stanza V, line 2 

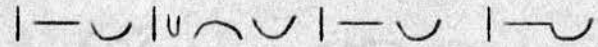
|laughed their|cryings and | did their| dance

Stanza IX, line 3 

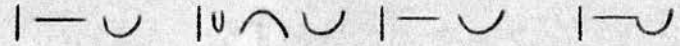
|reaped their| sowing and|went their| came

Ad (iv)

(a)

Stanza 1, line 4 

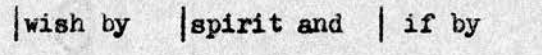
he |sang his| didn't he|danced his| did

Stanza II,line 3 

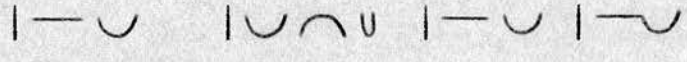
they |sowed their| isn't they|reaped their| same

Stanza V, line 4

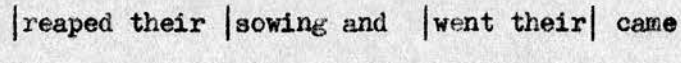
|said their|nevers they |slept their| dream

(also VIII; 4) 

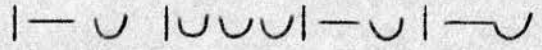
|wish by |spirit and | if by | yes

Stanza V, line 2 

|laughed their|cryings and |did their| dance

(also IX; 3) 

|reaped their |sowing and |went their| came

Stanza II, line 2 

| cared for|anyone | not at| all

(b)

Stanza V, line 1

|someones | married their|every |ones

4

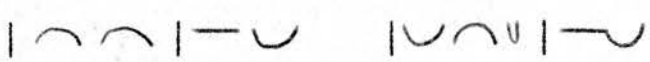
|said their| nevers they|slept their | dream

also I, 4 he |sang his | didn't he| danced his| did

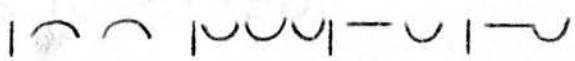
II, 3 they | sowed their | isn't they| reaped their| same

VIII, 4 | wish by | spirit and | if by | yes

(c)

Stanza III, line 1 

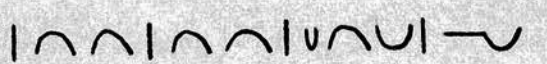
| children | guessed (but| only a | few)

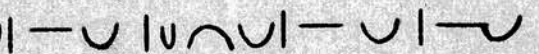
Stanza VII, line 1 

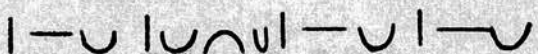
| one day | anyone | died I | guess

To sum up, in all four groups repetition of quantity pattern throughout the whole line never occurs with all three 3-syllable feet, the First Basic pattern. There are a few examples of complete repetition with all three two-syllable feet, the Second Basic pattern, but only when these feet are filled with one particular quantity pattern | — ∪ | (IV, 1, 2, 3; VIII, 1, 2).

In the mixed group with two 2-syllable feet, the repetition occurs between stanzas:

I,2; VI, 4: 

I,4; III, 3; V,4; VIII,4: 

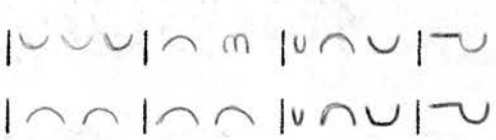
V,2; IX, 3: 

Rhythmic Movement

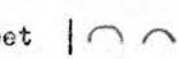
Modifications within stanzas: line progression.

Stanza I

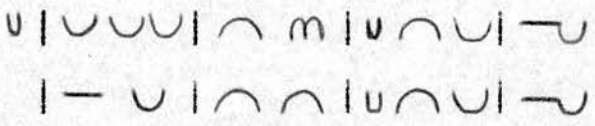
This stanza is constructed on the principle of a change by not less than two numerical elements at a time, with the simultaneous appearance of two feet of identical quantity pattern. I will refer to this in the future as IQP. Thus the drastic change by two elements (which affects one sub-element in each two elements in the pattern) is balanced by a repetition of quantity pattern in the remaining two feet. This principle applies to every single line in the stanza: every line is related to the previous line through these typological changes, though their surface (Quantity) realizations may (and ought to !) vary. In addition, a third numerical modification appears in the Line-end Marker of the remaining lines in the stanza.

Lines 1 - 2: 

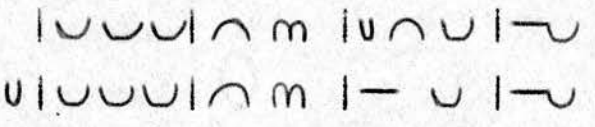
Repetition is reserved for the Line-end Marker thus emphasising and delimiting the line as a structural unit.

The first two feet undergo a numerical change by two elements (-1) (-1) to give two 2-syllable feet in the corresponding position. The abrupt numerical change is highlighted by a repetition of quantity pattern in both new feet  . This makes the modification stand out more than would have been the case if one foot had also undergone a quantity change, in addition to the numerical change. This can be easily tested by pronouncing one of the feet

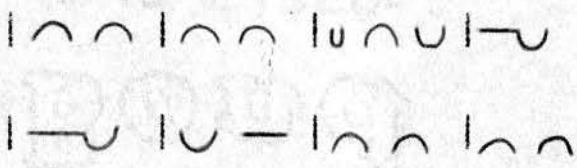
with a different quantity pattern e.g. | — ⏑ | :



Had the numerical change not taken place in the way it did, and if the first two feet had kept their 3-syllable numerical scheme while only one foot had undergone a numerical change, the auditory effect would have been less remarkable. To appreciate this, it is enough to alter the syntactic arrangement in line 2 so as to get Standard English syntax: 'with so many bells floating up and down'. The rhythmic consequence of such a rearrangement is absolute ruin :

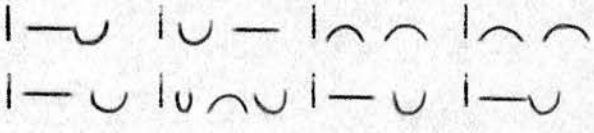


Lines 2 - 3:



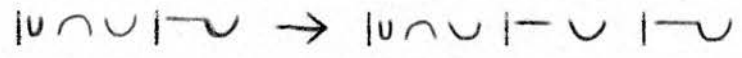
Repetition of the two identical feet takes place here, but with a positional shift: the two feet |⌒⌒|⌒⌒| now appearing in the Line-end Marker. Numerical change by 2 elements is non-contiguous (-1) ... (-1). Additional extension takes place within the final foot of the Line-end Marker (+1). Also the Quantity Pattern is changed within the numerically unaltered foot.

Lines 3 - 4:



Numerical change by 2 elements is non-contiguous but the direction change is reversed (+1) ... (+1). The additional extension in the final foot of the Line-end Marker is reversed to give a contraction (-1). Again the Quantity Pattern is changed in the numerically unaltered foot.

Repetition: a modified repetition of the pattern in the previous Line-end Marker



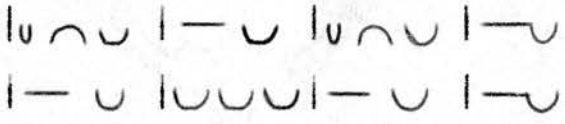
the inserted foot having the same pattern as the other disyllabic foot in the line, thus constituting an identity pair as before.

Stanza II

The stanza starts with a numerical reversal of the last line in the preceding stanza, keeping the corresponding quantity patterns intact a skilful linking device.

Repetition: two feet with identical quantity pattern, this time 3-syllable feet in non-contiguous positions. One of the feet belongs to the Line-end Marker, which is an exact repetition of the Line-end Marker in I: 1, 2 - a further link with the preceding stanza.

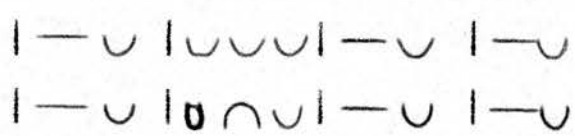
Lines 1 - 2:



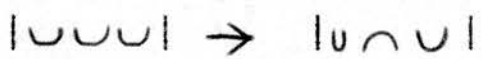
Numerical Reversal appears here again: 3-syllable feet "become" 2-syllable feet; the 2-syllable foot "becomes" a 3-syllable foot. This involves the complicated (-1) (+1) (-1) scheme discussed earlier. As in the preceding case, the single different foot |— ⏑ | becomes

one of the pair of Identical Quantity patterns. The only difference to be found is in the quantity pattern within the 3-syllable foot; if this had remained unmodified, the line would have been an exact repetition of the previous line (line 4, stanza I).

Lines 2 - 3:

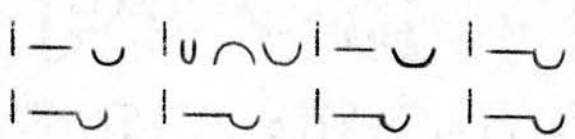


Here the repetition mentioned above is finally achieved, but only after nearly a cycle of changes. In the transition from lines 2 - 3 the pair of IQP feet is repeated, its positional arrangement is repeated, and only the quantity pattern in the 3-syllable foot is altered:



In addition to these repetitions, the Line-end Markers show exact repetition.

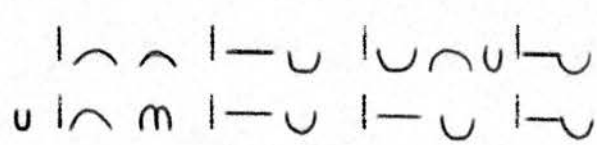
Lines 3 - 4:



An abrupt change into a monosyllabic line involving a complicated scheme (-1) (-1) (-1) (-1) produces a rather arresting effect, which is reminiscent of the impact of the first decisive modification (-1) (-1) in Stanza I.

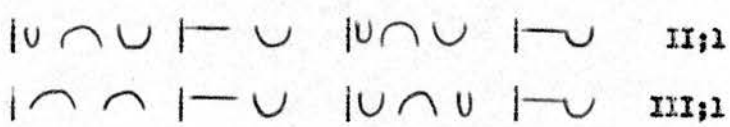
Stanza III

Lines 1 - 2:



The initial line is reminiscent of the initial line in the preceding stanza. It has been obtained as a result of two changes: one Numerical (-1)

and one Quantitative, but it retains as much of the positional correspondence as possible:



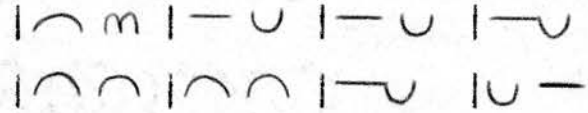
II;1

III;1

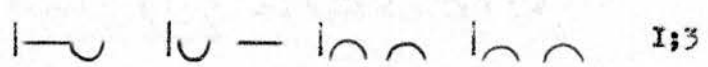
One foot retains both the Numerical and Quantity patterns. Note, too, that this time all feet in the line are different with regard to their quantity as they were in the first line of the poem. This feature will be repeated more than once in the course of the poem.

Lines 1 - 2 return to the change by two elements (+1) (-1) with simultaneous retention of one quantity pattern for two feet. We are by now familiar with this type of change.

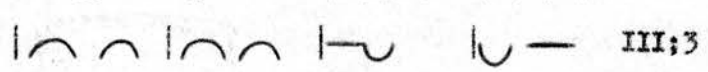
Lines 2 - 3:



Line 3 is a repetition of line 3 in stanza I but with a positional shift of two identical feet at a time:



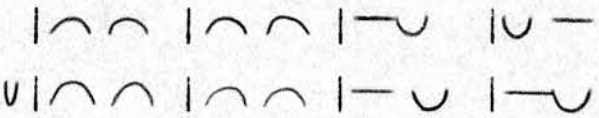
I;3



III;3

It happens to be one of the Refrain lines with its lexical content retained. The transition from lines 2 - 3 is more of a disjunctive device than a linking one. The complicated (-1) ... (-1)(+1) scheme takes place in the corresponding positions. However, if one allows for positional shifts, the whole pattern differs by one syllable only, in the transition from the 3-syllable foot into a 2-syllable foot. The familiar type of two identical quantity feet is repeated here again.

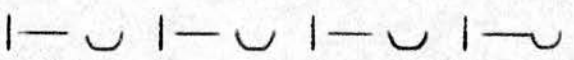
Lines 3 - 4:



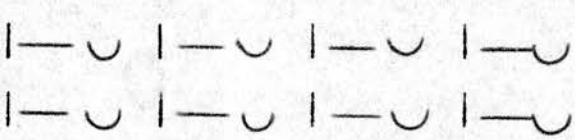
After a rather disjunctive pattern an emphatic repetition takes place: the two IQP feet retain their quantity and their place in the pattern. The Line-end Marker reflects the typical change by two elements (+1) (-1).

Stanza IV

Lines 1 - 2

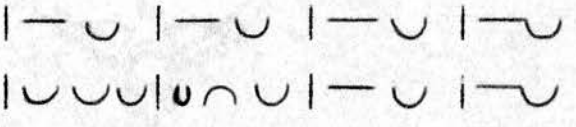


2 - 3



become the culminating point for repetition. Not merely two feet have an identical quantity pattern, but this identity marker is also extended to the third foot. Further, this repetition is not limited to the internal structure of the line: it is extended to three consecutive lines in the stanza. In addition, all the lines end in a monosyllabic foot, and consequently have exactly the same rhythmic structure.

Lines 3 - 4:

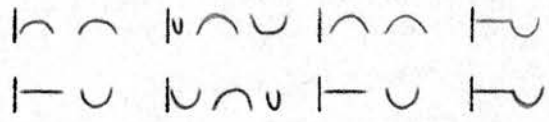


The regular change by two elements returns with the direction change showing reversed polarity (+1) (+1).

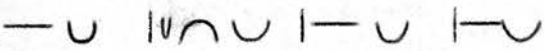
Two different quantity feet appear instead of the usual IQP pair. This mixed type appeared before in III; I (in a slightly different manifestation).

Stanza V

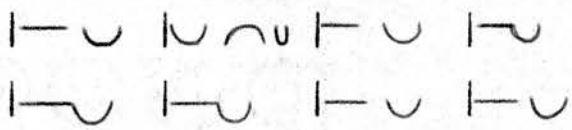
Lines 1 - 2:



We return to the pair of identical quantity feet of the non-contiguous type. The pattern is reminiscent of that in stanza II line 3:

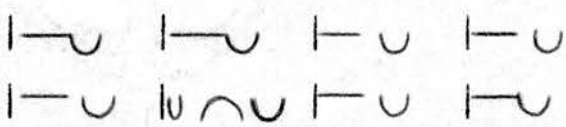
 In the transition from lines 1 - 2 the change by two elements refers to a quantity change only: one different quantity pattern is substituted for the previous pattern in the IQP pair of feet. Its position is retained, ensuring a sense of repetition. The other different quantity pattern is introduced in the 3-syllable foot.

Lines 2 - 3:



The transition here is one of the sharp disjunctive type, involving the complicated scheme (-1)(-1)(-1)(+1). This results in a pair of identical feet, both monosyllabic and therefore emphatic in that position.

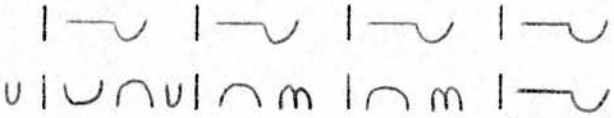
Lines 3 - 4:



The same change takes place in (+)...(-) direction, so as to return to the previous pattern. (The pattern of Line 2 is repeated, but with one quantity change in the 3-syllable foot). The usual IQP pair retains its identity, with a shift in position.

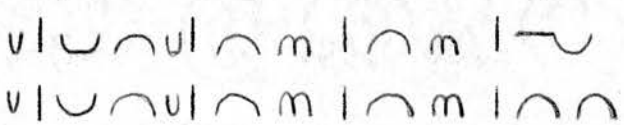
Stanza VI

Lines 1 - 2:



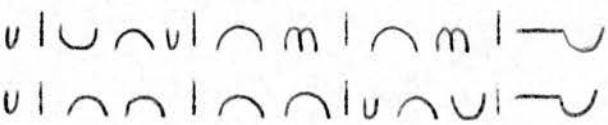
Line I is a lexical repetition of an earlier line (II,4) but with a positional shift by two elements. This fact is concealed in the monosyllabic structure and is only revealed on the lexical level. In the transition from lines 1 - 2 the change is perhaps the culminating one of the disjunctive type: (+1)(+1)(+1)(+1)(+1)(+1). As usual there is the IQP pair to balance it; and since all the feet are 3-syllable feet, the pair this time is a 3-syllable pair. One point should be mentioned in connection with the apparent disjunction: the two lines represent two different basic patterns which have been brought together on this occasion, 3 3 3 1 and 1 1 1 1.

Lines 2 - 3:



As in the preceding stanza, after a drastic disjunctive change there is a return to repetition with only one quantity element changed. The repetition is extended to all three feet (two of which are IQP), and the change (+1) to the final foot of the Line-end Marker.

Lines 3 - 4:

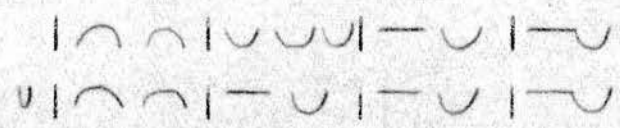


Here there is a return to the numerical change by 2 contiguous elements (-1)(-1). In fact it is a lexical repetition of the first modified pattern (I;2). The third foot does not repeat the quantity pattern

of the preceding line.

Stanza VII

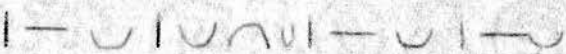
Lines 1 - 2:



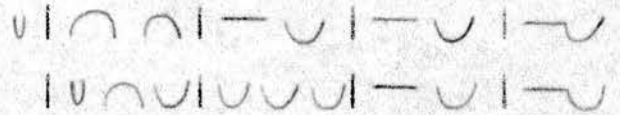
The first line is related to the last line of the preceding stanza by a positional shift which takes place on the numerical level, with the 2-syllable feet taking up non-contiguous positions. The disjunctive type is present in so far as all feet are different. (Previous parallel arrangements have exhausted the following possibilities:

V;1

V;4

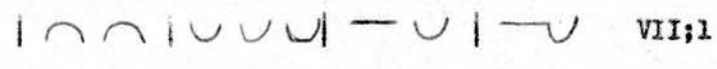
V;2 

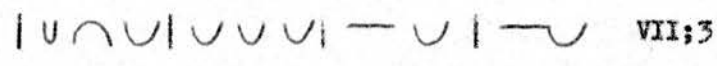
The transition from a disjunctive line involves a stronger reliance on repetition, as was the case on previous occasions in similar circumstances. The IQP pair is now introduced through only one (-1) numerical change. The first foot retains its identity. Owing to the position of the IQP pair a repetition is also secured in the Line-end Marker.

Lines 2 - 3: 

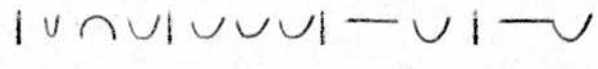
We see here a return to the numerical change by 2 elements (direction altered to +) and a repetition of the Line-end Marker. The IQP pair

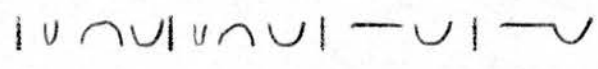
is missing from the pattern, all feet are different. It is in fact as closely related to line 1 as possible with a repetition throughout, except for one extended foot.


VII;1


VII;3

Lines 3 - 4:

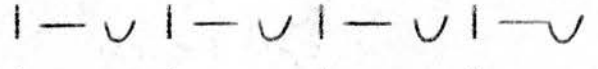


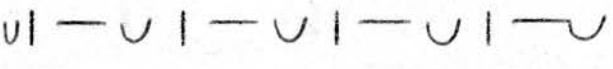


The IQP pair returns in line 4 through one quantity change only, and there is a repetition of the Line-end Marker.

Stanza VIII

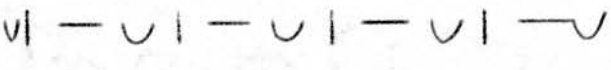
Lines 1 - 2:

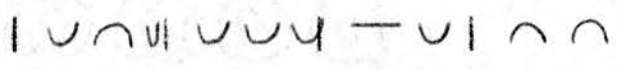




Whole line repetition (cf. previous occurrence of the same quantity type and the same line treatment in stanza IV).

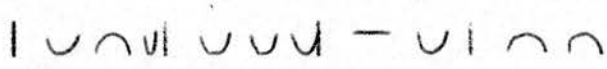
Lines 2 - 3:

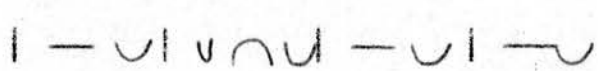




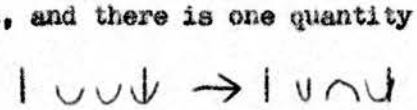
A change by three elements in the "+" direction, comprising two contiguous elements. There is no IQP pair in this transition, all feet are different with respect to quantity.

Lines 3 - 4:



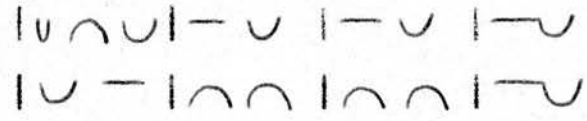


There is a return to the IQP pair. The numerical change by two elements is non-contiguous, and there is one quantity change within the three-syllable foot:



Stanza IX

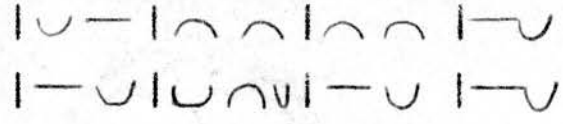
Lines 1 - 2:



(The first line repeats the numerical character of the last line of stanza VIII but with a positional shift, the IQP pair now appearing in contiguous positions).

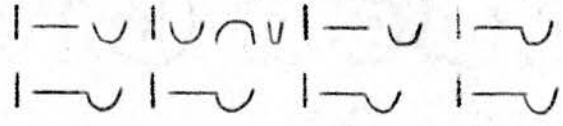
In the transition from lines 1 - 2, the IQP pair retains its position, but has its quantity altered. There is also a numerical change by (-1).

Lines 2 - 3:



The emergence of a new IQP pair through two quantity changes and one numerical change (+1).

Lines 3 - 4:



The complicated change (-1) $\widehat{(-1)(-1)}$ (-1) is exactly the same as in stanza II; 3-4, only the quantity in the 3-syllable foot is different here, but the IQP pair repeats the previous (II;3) pattern.

SELECTED MODIFICATIONS

After dealing with the overall numerical and quantitative changes, I should like to select a few kinds of modifications for special attention. The first series concerns the modifications involved in the transition from lines1-2 at the very beginning of the poem. Auditorily, these lines are very effective. What makes them so?

Let us consider several possible combinations which can be obtained by re-ordering the lexical items within these lines and consequently the rhythmic patterns:

the original version: |anyone | lived in a |pretty how | town
with | up so | floating | many bells | down

The striking effect of the poem is usually attributed to its deviant grammar and in all probability these two lines would be used as a proof. Indeed, if we take the corresponding Standard English structure and add, of necessity, the conjunction 'and', we obtain the line:

with | so many | bells floating | up and | down

This, coupled with the first line of the poem, produces a disastrous effect:

(1) | anyone | lived in a | pretty how | town
with | so many | bells floating| up and | down

The 'deviant grammar' approach scores an apparent victory here. I should like to contend however that it is not the deviant grammar which makes these lines so remarkably effective, but particular types of rhythmic modifications which relate the two lines. To prove this, let us keep the 'deviant grammar', but re-arrange some of the constituents:

(2) |anyone | lived in a | pretty how | town

With | many bells | down | up so | floating

or

(3) | anyone | lived in a | pretty how | town

With | down | many bells | up so | floating

or

(4) |anyone | lived in a | pretty how | town

With | down | up so | floating | many bells

The fact that they sound so unsatisfactory can only be explained through an unsuccessful rhythmic grouping. (I shall return to this point presently and discuss it in greater detail). Yet more satisfying results can be obtained within the 'deviant grammar' if we use rhythmic modifications in a more skilful, principled way. Let us examine two such examples and the differences between them:

(5) | anyone | lived in a | pretty how | town

With | floating | many bells | up so | down

(6) a less satisfactory combination:

| anyone | lived in a | pretty how | town

With | floating | up so | down many | bells

Lastly, let us return to the original version:

| anyone | lived in a | pretty how | town

With | up so | floating | many bells | down

Referring to variation No. 6, it can be seen that the rhythmic pattern has been modified so as to interchange the positions of the first two feet and to replace 'down' with 'bells' in the final foot, in addition

to a minor re-ordering of quantity pattern within the last but one foot. However, all these changes did not affect the numerical pattern of the line since it still shows the same arrangement: 2 2 3 1. The significant difference lies in the fact that rhyme has been withdrawn from use as a linking device. Previously, we had 'town' and 'down' delimiting the lines as rhythmic units, now we have the non-rhyming 'town' and 'bells' with the overall auditory effect visibly impaired. Variation No. 5 proves to be more satisfactory in that it retains the rhyme, though it changes the positional arrangement of the two- and three-syllable feet from a contiguous position for the two-syllable feet, to a non-contiguous position. This arrangement, however, is well within the 'rhythmic grammar' [1] of the poem as many later lines prove. Comparing variations Nos. 5 and 6, it appears that a quantity change and the disappearance of rhyme within a numerically identical Line-end Marker disturb perception more than a numerical change which leaves the final monosyllabic foot with its rhyme unaltered. This does not mean that rhyme is always an indispensable prerequisite. The same delimiting effect can be secured through an exact repetition of the quantity pattern in both feet of the Line-end Marker, which is what Eliot did in the first two lines of 'Death by Water' (The Waste Land, part IV):

1. Similarly, another variation With| many bells |floating|up so| down is acceptable on the same grounds

a | fortnight | dead |

and the | deep sea | swell |

which are contained in: 'Phlebas the Phoenician, a fortnight dead,

Forgot the cry of gulls, and the deep sea swell,

And the profit and loss. '

Variation No. 4 is unsatisfactory because it contains too many numerical modifications in addition to the disappearance of rhyme, every single foot in the pattern has undergone a modification, some even a double numerical modification

| anyone | lived in a | pretty how | town 3 3 3 1

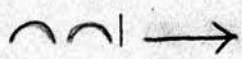
with | down | up so | floating | many bells 1 2 2 3

so as to give the following formula: $\overbrace{(-1)(-1)}\ (-1)\ (-1)\ \overbrace{(+1)(+1)}$

Although there is a gradual progression in terms of number of syllables per foot, from 1 to 3, the progression is in the wrong direction; it increases the number of syllables in the Line-end Marker up to 3 syllables in the final foot instead of aiming at the usual monosyllabic marker, or at best a 2-syllable final foot. The last point brings us to the next series of variations, Nos.2 and 3. Here we have a 2-syllable final foot, but also rather a large number of other changes:

(3) | anyone | lived in a | pretty how | town 3 3 3 1

with | down | many bells | up so | floating 1 3 2 2

with a quantity change within the corresponding three syllable foot:  (I shall refer to it as Q), in addition to the numerical change expressed by the following formula: $\overbrace{(-1)(-1)}\ldots\overset{Q}{\ldots}(-1)(+1)$.

A slightly less modified pattern, with only one (-1) at the beginning of the line, but with the remaining changes of the same type, appears in the next, 3rd line, in the same first stanza in the poem and fails to be perceived as related rhythmically to the preceding line:

With | up so | floating | many bells | down 2 2 3 1

| Spring | summer | autumn | winter 1 2 2 2

The Quantity change here is from | ⏜ ⏜ | to | ⏝ — | ; the numerical change formula: (-1) ...$^{Q}_{Q}$. (-1)(+1).

Exactly the same formula: (-1) ...$^{Q}_{Q}$. (-1)(+1) applies to another transition with a di-syllabic final foot, where the two lines are no longer perceived as related:

Stanza III, 2-3

and | down they for|got as | up they | grew 3 2 2 1

| autumn | winter | spring | summer 2 2 1 2

There is another example which does not sound related because too many changes have taken place earlier on in the line, in addition to one numerical change in the Line-end Marker:

Stanza V, 2-3

| laughed their | cryings and| did their| dance 2 3 2 1

| (sleep | wake | hope and | then) they 1 1 2 2

The numerical change formula involves four changes: (-1) $\overbrace{(-1)(-1)}$ ... (+1)

The only time when a Line-end Marker with a 2-syllable final foot sounded closely related to the preceding line was when this extension from a monosyllabic to a di-syllabic foot happened to be the only

modification in the pattern. Only then was the change readily accepted by the ear:

Stanza VI, 2-3

(and | only the | snow can be|gin to ex|plain 3 3 3 1

how | children are | apt to for|get to re|member 3 3 3 2

Returning to variations Nos 3 and 2, we see that exactly the same number of changes as in variation No. 3 has taken place in variation No. 2 though in a slightly different order:

..$\overset{\frown}{\text{x}}$. $\overset{\frown}{(-1)(-1)}$ (-1) (+1)

As for the difference between the original version and variation No.1 there are two non-contiguous changes in variation No.1: a quantity change in the first foot $|\smile\ \smile\smile| \rightarrow |\frown\ \frown|$ and a numerical change in the first foot of the Line-end Marker. Since the pattern has not yet had a sufficient time to establish a particular expectancy in the mind of the listener, the changes have a disorientating effect. This is avoided in the original version where the Line-end Marker is kept strictly identical, and the two numerical changes are introduced at the very beginning, but with the same quantity pattern in both $|\frown\ \smile\ |\frown\ \smile\ |$:

| anyone | lived in a | pretty how | town 3 3 3 1

with | up so | floating | many bells | down 2 2 3 1

This change by two elements (involving one sub-element in each of two feet) is not random or accidental. In fact it is a characteristic feature of the poem, though very often accompanied by an additional change.

The pattern 2 2 3 1 introduced in the line "with up so floating many bells down" is a productive pattern. It undergoes all possible modifications within the first three positions, all of which are used in the poem:

2 2 3 1

2 3 2 1

3 2 2 1

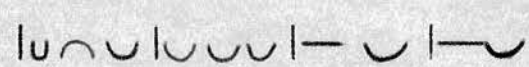
Pattern 2 3 2 1 is the highest frequency pattern in this group. It is related to another pattern 3 2 3 1 through Reversal, a principle used on other levels in the poem. It involves two (again two !) changes:

i) the substitution of a 3-syllable for each 2-syllable foot, keeping an IQP pair in each case

ii) the substitution of a 2-syllable for the 3-syllable foot in the pattern which is being subjected to Reversal (cf. stanzas I,4 - II, 1; II, 1 - II, 3;).

The technique of Reversal need not imply solely a numerical reversal; the term is equally applicable to quantitative changes which are accompanied by a suitable positional shift as in the following example:

stanza IV, 4

VII, 3 

Pattern 3 2 3 1 which was mentioned above, is related through a Positional change to pattern 3 3 2 1.[1]

1. This pattern is in turn related to 2 2 3 1 through a numerical Reversal (!)

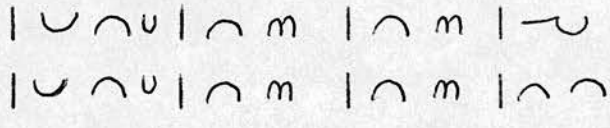
This pattern may appear to constitute an obstacle to our generalisation about the change by two elements since it looks as if it had been derived from 3 3 3 1 through only one change (-1). I should like to suggest here that it could be regarded not as derived from 3 3 3 1 in the obvious way by one change, but rather as derived from a different base (the second basic pattern 2 2 2 1) through the same type of change (by two elements) but in the opposite, upward direction (+1) (+1). If this is so, then the first occurrence of this pattern (3 3 2 1) should take place in a stanza with a prevailing number of 2-syllable feet, preferably near a 2 2 2 1 pattern.

Indeed, if we examine the consecutive lines in the poem in search of such an occurrence, we meet it for the first time in stanza IV, where it is preceded by three consecutive lines containing the second basic pattern 2 2 2 1. The triple repetition here is a sufficient announcement of the transition into the new thematic (in the rhythmic sense) pattern. The patterns that follow should prove to be a selection of patterns derived from the first basic pattern: 3 3 3 1 → 2 2 3 1 → 2 3 2 1 → 3 2 2 1; and of patterns derived from the second basic pattern: 2 2 2 1 → 3 3 2 1; as well as an occasional return to each of the three basic patterns. In fact, this is what happens in the subsequent stanzas in the poem, except that one of the modifications from 3 3 3 1 is given greater prominence through frequent repetitions, while modifications from pattern 2 2 2 1 are restricted to one type only 3 3 2 1 in

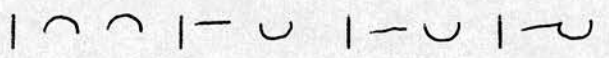
this section (the other type 3 2 3 1 appearing in the earlier section of the poem through numerical reversal I,4 - II,1 and type 2 3 3 1 missing altogether).

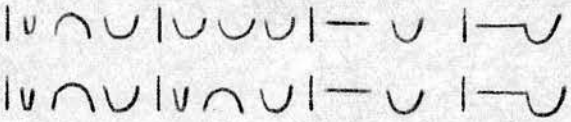
If the typological principle of a change by two elements is as basic to the verse structure in this poem as I am suggesting, and if my analysis positing an unexpected "derivational history" for pattern 3 3 2 1 is correct, then we should expect to find that this principle operates on the third basic pattern as well.
In stanza V, we come across the pattern 1 1 2 2 which can be regarded as a pattern derived from the third basic pattern 1 1 1 1 through a change by two elements in the upward (+) direction. No other direction was possible here since the alternative would result in ∅.

Although the change by two elements appears to be basic to the poem, it is legitimate to expect also a few changes by one element only, whether numerical or quantitative; especially after the 2-syllable base (2 2 2 1) has been reached. This is indeed what happens in the poem in the transition from lines 2 - 3 in stanza VI: (+1); in stanza VII, lines 1 - 2 (-1); same stanza, lines 3 - 4 (Quantity change); the remaining changes being by at least two elements. Examples of a single change are:

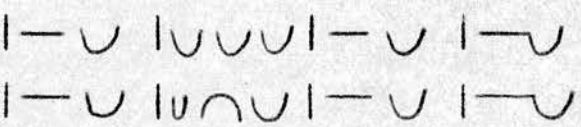
Stanza VI, 2 - 3 

Stanza VII, 1 - 2



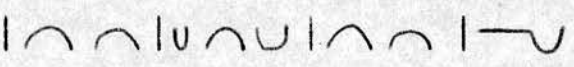
Stanza VII, 3 - 4 

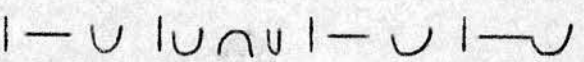
There is only one example of this last type of change (one quantity change only) earlier in the poem: in stanza II, lines 2 - 3



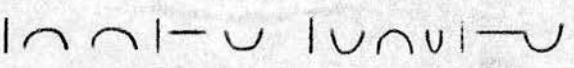
Cummings, however, tends to avoid such simple changes and gives greater preference to changes by two elements, whether quantitative or numerical, as shown below:

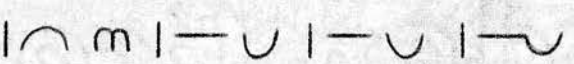
(a) quantitative change by two elements:

stanza V, 1 

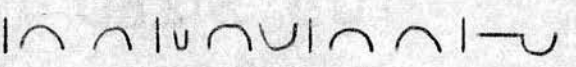
V, 2 

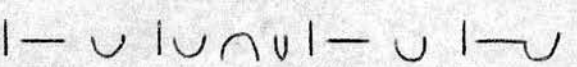
(b) numerical change by two elements:

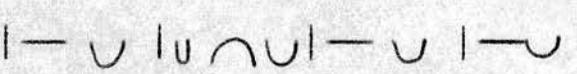
stanza III, 1 

III, 2 

Further, he manipulates the two types of change in a skilful way so as to produce delayed response effects by preceding the closely related pattern with one which has undergone modification twice, e.g:

Stanza V, 1 

2 

4 

where lines 1 and 2 are related through two quantity changes while lines 1 and 4 are related through only one quantity change.

Equally skilful is his manipulation of 'disjunctive' patterns so as to produce enough contrasts to balance the repetitive effects, e.g. the way in which the last line in stanza II is juxtaposed with the repetitive lines that precede it in this stanza:

II, 1

2

3

4

Parallelism can be seen in the application of this type of contrast in the last two lines of the last stanza:

IX, 3

4

A reversed arrangement can be noticed in the first two lines of stanza VI:

VI, 1

2

There are other examples of the same type, but the above should by now be sufficient illustration of the more specific features of cumming's technique.

Rhythmic patterning in relation to the intonation curve.

I believe intonation to act on the rhythmic pattern in a way similar to phrasing in music. It is a supra-structure, not a primary one.

It would be highly arbitrary to discuss the rhythmic patterns of this poem in relation to its intonation, described in terms of pitch levels, tones or tunes. This would be an unwarranted generalization of the pitch patterns of one accent of English to others where different pitch patterns may obtain in the corresponding places. The only secure way is to consider the domain of intonation, as this is not likely to vary from accent to accent, though, even here, it is sometimes possible to have two alternatives: either one or two contours per line.

This would be evident in constructions with the conjunction "and" for example, where the conjunction can be taken in either a linking or non-linking sense. In this poem, "and" is used to juxtapose rather than to link two ideas, therefore two contours per line are more frequent.

Two alternatives are also possible before adjuncts or modifiers as, for instance, in stanza I, line 1 which can be read with a continuous contour or with two intonation contours.

Two contours may also be used in order to separate adjuncts from other constituents as in line 2 in the same stanza, lines 1, 2 in stanza II, and line 2 in stanza VIII.

Certain collocations may also have the effect of producing two contours per line which are optional, as in stanza I, 3 or II, 4.

Two contours per line are also possible before major syntactic breaks e.g. between VP and NP immediately dominated by the initial symbol S of the entire phrase-marker as in stanza VI, 2 and IV, 4.

This is not the case before a Direct Object, see stanza V, 1, or verbs which take an infinitival verb phrase complement as in VI, 3.

In all cases of apposition, which are numerous in this poem, two contours per line appear.

I have marked the domain of intonation(see following page) by putting a stroke in an appropriate place in the line, and enclosing it in brackets whenever two alternatives were possible, i.e. either one or two contours for the given line. It will be seen that the resulting breaks appears exactly in the middle of the lines and correspond to what is known as caesura.

E.E. Cummings Selected Poems 1923-1958 (P. 44)

I
anyone lived (/) in a pretty how town
(with up so floating (/) many bells down)
spring summer (/) autumn winter
he sang his didn't/he danced his did.

II
Women and men (/) (both little and small)
cared for anyone (/) not at all
they sowed their isn't/they reaped their same
sun moon (/) stars rain

III
children guessed/(but only a few
and down they forgot/as up they grew
autumn winter spring summer)
that noone loved him (/) more by more

IV
when by now/and tree by leaf
she laughed his joy/she cried his grief
bird by snow/and stir by still
anyone's any/was all to her

V
someones married their everyones
laughed their cryings/and did their dance
(sleep wake hope and then) they
said their nevers/they slept their dream

VI
stars rain sun moon
(and only the snow (/) can begin to explain
how children are apt to forget to remember
with up so floating many bells down)

VII
one day anyone died i guess
(and noone stooped to kiss his face)
busy folk buried them (/) side by side
little by little/and was by was

VIII
all by all/and deep by deep
and more by more/they dream their sleep
noone and anyone/earth by april
wish by spirit/and if by yes.

IX
Women and men/(both dong and ding)
summer autumn(/)winter spring
reaped their sowing/and went their came
sun moon (/) stars rain

EXTERNAL ANALYSIS

A comparison with another poem by e. e. cummings

'my father moved through dooms of love'

e. e. cummings

my| father | moved through| dooms of | love
through | sames of | am through | haves of | give
|singing each | morning | out of each | night
my | father | moved through | depths of | height

this | motion|less for|getful | where
|turned at his | glance to | shining | here;
that | if (so| timid | air is | firm)
|under his | eyes would | stir and | squirm

| newly |^ as from un|buried | which
|floats the first | who, his | april | touch
drove | sleeping | selves to | swarm their | fates
woke | dreamers |^ to their | ghostly | roots

and | should some | why com|pletely | weep
my | father's | fingers | brought her | sleep:
|vainly no | smallest | voice might | cry
for | he could | feel the | mountains | grow.

|Lifting the | valleys |^ of the | sea
my | father | moved through | griefs of | joy;
|praising a | forehead | called the | moon
|singing de|sire | into be|gin

| joy was his | song and | joy so | pure
a | heart of | star by | him could | steer
and | pure so | now and | now so | yes
the | wrists of | twilight |(^)would re|joice

|keen as mid|summer's | keen be|yond
con|ceiving | mind of | sun will | stand,
so | strictly (|over | utmost | him
so | hugely)|stood my | father's | dream

his | flesh was | flesh his | blood was | blood:
no | hungry | man but | wished him | food;
no | cripple | wouldn't | creep one | mile
up|hill to | only | see him | smile

|Scorning the | pomp of | must and | shall
my | father | moved through | dooms of | feel;
his | anger |^ was as | right as | rain
his | pity |^ was as | green as | grain

sep|tembering | arms of | year ex|tend
less | humbly | wealth to | foe and | friend
than | he to | foolish |∧ and to | wise
|offered |∧ im|measurable | is

|proudly |∧ and (by oc|tobering | flame
|beckoned) as | earth will | downward | climb,
so | naked |∧ for im|mortal | work
his | shoulders | marched a|gainst the | dark

his | sorrow |(∧) was as | true as | bread:
no | liar | looked him | in the | head;
if | every | friend be|came his | foe
he'd | laugh and | build a | world with | snow.

My | father | moved through | theys of | we,
|singing each | new leaf | out of each | tree
(and | every | child was|sure that | spring
|danced when she | heard my | father | sing)

then | let men | kill which | cannot | share,
let | blood and | flesh be | mud and | mire,
|scheming i|magine, | passion | willed,
|freedom a | drug that's | bought and | sold

|giving to | steal and | cruel | kind,
a | heart to | fear, to | doubt a | mind,
to | differ |∧ a di|sease of | same,
con|form |∧ the | pinnacle of | am

though | dull were | all we | taste as | bright,
|bitter all | utterly | things | sweet,
|maggoty | minus and | dumb | death
|all we in|herit,| all be|queath

and | nothing | quite so | least as | truth
- i | say though | hate were | why men | breathe -
be|cause my | father | lived his | soul
|love is the | whole and | more than | all

EXTERNAL ANALYSIS

A comparison with another poem by the same author.

It is interesting to note that another poem by cummings, "my father moved through dooms of love", is strongly reminiscent of "anyone lived in a pretty how town" to such an extent that even without knowing the authorship, it should not be difficult to guess the hand. There are certain structural resemblances, features of technique, that allow us to regard these poems as attempts at exploring the same kind of devices. This refers not only to the grammatical innovations which cummings relishes so much, but also to the rhythms of the two poems. Both are composed in four line stanzas consisting of four stresses per line, and in addition to these they share certain rhythmic patterns. If we look at the patterns employed in the poem we shall receive a confirmation of our auditory impression:

Numerical Patterns

Stanza I	2	2	2	1
	2	2	2	1
	3	2	3	1
	2	2	2	1
Stanza II	2	2	2	1
	3	2	2	1
	2	2	2	1
	3	2	2	1

Stanza III

2 3 2 1

3 2 2 1

2 2 2 1

2 2 2 1

Stanza IV

2 2 2 1

2 2 2 1

3 2 2 1

2 2 2 1

Stanza V

3 2 2 1

2 2 2 1

3 2 2 1

3 1 3 1

Stanza VI

3 2 2 1

2 2 2 1

2 2 2 1

2 2 2 1

Stanza VII

3 2 2 1

2 2 2 1

2 2 2 1

2 2 2 1

Stanza VIII

2 2 2 1

2 2 2 1

2 2 2 1

2 2 2 1

Stanza IX

3 2 2 1

2 2 2 1

2 2 2 1

2 2 2 1

Stanza X

3 2 2 1

2 2 2 1

2 2 2 1

3 2 2 1

Stanza XI

2 3 3 1

3 2 2 1

2 2 2 1

2 2 2 1

Stanza XII

2 2 2 1

2 2 2 1

2 2 2 1

2 2 2 1

Stanza XIII

2 2 2 1

3 2 3 1

2 2 2 1

3 2 2 1

Stanza XIV

2 2 2 1

2 2 2 1

3 2 2 1

3 2 2 1

Stanza XV

3 2 1 1

2 2 2 1

2 ^ 2 2 1

1 ^ 1 4 1

Stanza XVI

2 2 2 1

3 3 1 1

3 3 1 1

3 2 2 1

Stanza XVII

2 2 2 1

2 2 2 1

2 2 2 1

3 2 2 1

The range of patterns employed by cummings in this poem emerges as:

2 2 2 1 2 ^ 2 2 1 2 2 ^ 2 1

3 2 2 1 3 2 ^ 2 1

3 2 3 1

2 ^ 3 2 1

3 3 1 1

3 2 1 1

3 1 3 1

2 ^ 3 3 1

1 ^ 1 4 1 - (alternative reading 2 4 1)

2 ^ 1 4 1

Additional patterns resulting from alternative readings are:

3 4 1 ^

3 2 1 ^

4 2 1 ^

2 4 1 ^

Only two basic patterns can be discerned: 2 2 2 1 and 3 2 2 1. The relationship between them involves a different type of derivational rule from the one which appeared to determine the basic patterns in "anyone lived in a pretty how town". Here the (+1) sub-element rule was applied to only one position in the basic pattern (2221) to

derive the next pattern (3221);[1] in the other poem the rule (-1) was applied to <u>all three positions</u>[2] in the pattern, giving a progressive diminution in the basic patterns: 3 3 3 1 2 2 2 1 1 1 1 1. Of the two basic patterns, "my father moved through dooms of love" shares 2 2 2 1 with "anyone lived in a pretty how town"; its second basic pattern 3 2 2 1 appears twice in "anyone lived in a pretty how town" (III,1; IX,1) but here it is only a modification of the first basic pattern by (-1)(-1): 3 3 3 1 → 3 2 2 1.

We find, besides these similarities, an overlap in the modified patterns: 3 2 3 1 and 2 ^ 3 2 1.[3] Pattern 3 2 3 1 occurs twice (I,3; XIII,2), and pattern 2 ^ 3 2 1 once (III,1). The non-corresponding patterns in "my father" tend to occur once only, with the exception of 3 3 1 1 which appears in two consecutive lines (XVI, 2, 3). Despite its greater length (there are 9 stanzas in "anyone" as compared with 17 in "my father", not only are there fewer basic patterns and fewer modifications in this poem, but the number of pattern combinations per stanza is smaller than in "anyone".

1. The same type of rule (±1) relates the remaining patterns without silent stresses:
   3 2 3 1 → 3 1 3 1 (-1)
   3 2 1 1 → 3 3 1 1 (+1)
   The interpretation of the relationships between these patterns may be questioned on grounds of their grouping - a different grouping would involve different rules ! However, the order in which they appear in the poem justifies our grouping entirely:
   3 2 3 1 (stanza I,3) 3 1 3 1 (stanza V,4)
   3 2 1 1 (stanza XV,1) 3 3 1 1 (stanza XVI,2)

2. The fourth and last being almost invariably 1.

3. 2 3 2 1 appearing here with the addition of a metrical pause.

This reduction in structural complexity or rather the absence of an elaborated structure can easily be perceived by the ear and can be confirmed on a detailed examination. Two stanzas (VIII, XII) contain one rhythmic pattern only: 2 2 2 1 the basic pattern; eight stanzas (I, II, IV, VI, VII, IX, XIV, XVII) contain two rhythmic patterns only (which is sufficient to induce a considerable monotony); seven stanzas (III, V, X, XI, XIII, XV, XVI) contain three patterns combined with one or both basic patterns. How does "anyone" compare with these statistics ? It is richer and more complex. It never has fewer than two patterns per stanza, and this only on one occasion (stanza IV). The remaining stanzas share equally the burden of three and four patterns each. One can, of course, regard this arrangement as the result of a shift along the complexity scale by one element in the upward direction: from the range I - III patterns per stanza to II - IV patterns per stanza. This may in fact be a feature of cumming's technique.

Looking at the stanza construction, we discover further features of <u>unmodified repetition</u> in "my father". In addition to the two stanzas consisting of a single pattern, identical in both cases (VIII, XII), there are two other stanzas identical in structure (stanzas VI, VII - <u>consecutive</u> !) - and a third one of the same kind but with metrical pauses (stanza IX). Moreover, a considerable number of stanzas start with one of the two basic patterns: fourteen stanzas in all. To appreciate the difference is sufficient to

hear the nine stanzas of "anyone" where the basic patterns are repeated four times in the stanza initial position: the first basic pattern 3 3 3 1 once (I), the second basic pattern 2 2 2 1 twice (IV, VIII), and the third basic pattern 1 1 1 1 only once (VI). The disproportion between the two poems in this respect is considerable (14 repetitions for 17 stanzas; four repetitions for 9 stanzas). Again this shows "anyone" as a more mature technical effort. Further, the basic patterns beginning the stanzas are allowed in "my father" to appear in consecutive stanzas, which heightens the 'hammering out' effect: pattern 2 2 2 1 begins stanzas I and stanza II; stanza IV; stanza VIII; stanzas XII, XIII, XIV; stanzas XVI, XVII. The second basic pattern 3 2 2 1 always appears in successive stanzas when it is stanza initial: in stanzas V, VI, VII; and in stanzas IX, X.

By contrast, in "anyone" not one single pattern appears in consecutive stanzas in stanza initial position. Of the three basic patterns only one 2 2 2 1 is repeated in stanza initial position, but in non-consecutive stanzas: IV and VIII. One other pattern, a modified pattern 2 3 2 1 is repeated in a similar way in stanzas V and VII; all the other stanza initial patterns differ from one another. Here again "anyone" shows technical superiority over "my father".

Not only is there repetition in stanza initial position, but within the stanzas themselves. As far as the internal structure

of stanzas is concerned, all stanzas consisting of two rhythmic patterns (with the exception of stanza I) contain both basic patterns; that is, their rhythmic variation consists in repetition of these two basic patterns. There are seven such stanzas : II, IV, VI, VII, IX, X, XIV, XVII. In stanzas with three different rhythmic patterns, the two basic patterns 2 2 2 1 and 3 2 2 1 are their two main constituents in all cases (III, V, XI, XIII, XVI) except one, stanza XV, where only one basic pattern appears, though repeated twice. The basic pattern 2 2 2 1 is used in all stanzas at least once, with the exception of two stanzas (I, XV), both basic patterns appear in each stanza (apart from those two stanzas where their basic pattern is repeated four times, taking up the whole stanzas: VIII, XII).

Comparing the above features of repetition with "anyone" we can see that the occurrence of basic patterns is carefully controlled. It would not be true to say of "anyone" that all its stanzas contain at least one basic pattern, for there is one stanza (V) consisting of modifications without any of the basic patterns being present. It would not be true either to say that one particular basic pattern (as in the case of "my father" : 2 2 2 1) appeared in all other stanzas. This feature of unmodified repetition is also absent from "anyone" . There are basic patterns repeated in the other stanzas, but in a controlled and disciplined manner: only one basic pattern is repeated in the first three stanzas, but each time it is a different basic pattern. Similarly, one of these

patterns is repeated later in stanza VII (2 2 2 1). A combination of two basic patterns occurs in three stanzas, but each time the grouping is different: stanza VI 1 1 1 1 with 3 3 3 1; stanza VIII 2 2 2 1 with itself; stanza IX 2 2 2 1 with 1 1 1 1. There is one occurrence of a triple repetition of the basic pattern within one stanza 2 2 2 1, in stanza IV, as compared with seven such identical cases of repetition in "my father" (I, IV, VI, VII, VIII, XII, XVII). Where basic patterns occur twice in a stanza in "anyone" , two cases are confined to stanzas with a combination of four rhythms, VI, IX,(it may be recalled here that the highest combination in "my father" was three rhythms), one repetition of basic pattern occurs within a stanza with three rhythmic patterns, (VIII).

Looking at the overall number of repetitions of the most frequent pattern, which happens to be a basic pattern in both cases with an identical numerical value, we notice that this pattern 2 2 2 1 occurs eight times in "anyone", and, thirty six times in "my father" a poem barely twice the length of "anyone" . If we now add to this number occurrences modified by metrical pauses, the number will be brought up to forty two. The second basic pattern in "my father" 3 2 2 1 appears seventeen times, including the rare metrical pauses; the corresponding highest frequency basic pattern in "anyone" 1 1 1 1 occurs three times. The numerical equivalent of "my father's" second basic pattern 3 2 2 1 used as a modification in "anyone", appears in the latter only twice.

These comparisons should be sufficient to convince us of the rhythmic monotony and uninventivliness in "my father" as compared with the dexterous use of repetition and modification in "anyone" . It shows how the application of a larger number of basic patterns and bolder rules for modification (by two elements at a time, for example) a greater variety of rhythms and a subtler interplay between them can be achieved through careful control and clever manoeuvering of the linguistic material. Although "my father" contains rare occurrences of bolder modifications 3 2 3 1 and 2 3 2 1 and 3 3 1 1, 3 1 3 1, 3 2 1 1) some of which occur in "anyone" (the former), the poet is apparently too timid to use them on a larger scale, and instead clings to tedious repetitions and "longueurs" which turn the poem into a "poeme-fleuve" with an air of Whitmanesque verbosity. However fine the sentiments expressed in "my father moved through dooms of love", it is a rather technically limited poem when compared with "anyone lived in a pretty how town".

RHYME.

Before examining the quantity patterns in the two poems, one more feature should be discussed: the poet's use of rhyme. Both poems are interesting in this respect. There is some overlapping in technique, in the sense that both poems contain a certain number of complete rhymes either in two consecutive lines and no more per stanza, or in two pairs of consecutive lines (only two or three stanzas in each poem).

Example of the first kind: "anyone..."

anyone lived in a pretty how town
with up so floating many bells down
spring summer autumn winter
he sang his didn't he danced his did. Stanza I

and should some why completely weep
my father's fingers brought her sleep:
vainly no smallest voice might cry
for he could feel the mountains grow. "my father..." Stanza IV

Example of the second kind: "anyone..."

Women and men (both little and small)
cared for anyone not at all
they sowed their isn't they reaped their same
sun moon stars rain Stanza II

his flesh was flesh his blood was blood
no hungry man but wished him food
no cripple wouldn't creep one mile
uphill to only see him smile "my father,.." Stanza VIII

There the similarity ends between the two poems. Each adopts its own way of solving the problem of the remaining two lines in the stanza. In "my father" the solution is rather ingenious: the last syllables in the line (they are all stressed monosyllables, one more regularity and repetition which "anyone" avoids), are grouped in pairs repeating the same last consonant, or a spelling rhyme of this type resulting in exact repetition of the second element of a diphthong.

There is one pair rhyming the diphthong in an open syllable (foe/snow, stanza XII), one pair with the initial consonant cluster "rhyming" but not the following diphthongs (cry/grow, stanza IV), and one pair completely unrelated (sea/joy, stanza V). It was this last "unproductive" type that became operative in "anyone" in the greater part of the poem (five stanzas: I, III, IV, V, VIII). Two stanzas were taken up by two rhymed pairs (II, IX), compared with three (VIII, XII, XIII) in "my father", and two other stanzas (VI, VII) reflect the device which dominates the technique in "my father", i.e. consonantal repetition:

Stanza VI; moon/down Stanza VII; guess/face

These devices function on these occasions in place of rhymed pairs, while in "my father" they appear in conjunction with rhymed pairs and fulfil the function of the unrelated pairs in "anyone". There is, however, an additional type in the rhyming scheme in "my father" which is not encountered in "anyone", namely <u>all four</u> lines ending in a consonantal rhyme in six of its seventeen stanzas: III, VI, XI, XIV, XVI, XVII.

The pattern for "my father" is then:

I
love
give
night
hight

II
where
here
firm
squirm

The pattern for "anyone" is:

I
town
down
winter
did

II
small
all
same
rain

The pattern for "my father"

III
which
touch
fates
roots

IV
weep
sleep
cry
grow

V
sea
joy
moon
be|gin

VI
pure
steer
yes
re|joice

VII
be|yond
stand
him
dream

VIII
blood
flood
mile
smile

IX
shall
feel
rain
grain

X
ex|tend
friend
wise
is

The pattern for "anyone"

III
few
grew
summer
more

IV
leaf
grief
still
her

V
every|ones
dance
they
dream

VI
moon
ex|plain
re|member
down

VII
guess
face
side
was

VIII
deep
sleep
april
yes

IX
ding
spring
came
rain

The pattern for "my father"

XI
flame
climb
work
dark

XII
bread
head
foe
snow

XIII
we
tree
spring
sing

XIV
share
mire
willed
sold

XV
kind
mind
same
am

XVI
bright
sweet
death
be|queath

XVII
truth
breathe
soul
all

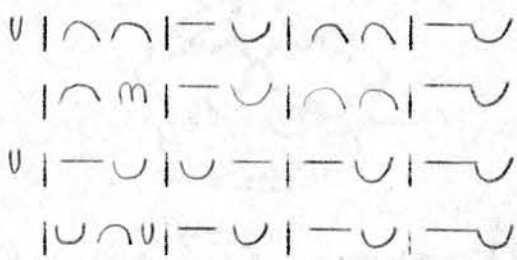
From the above illustration we see that a certain uniformity is evident in the arrangement of the couplets with perfect rhyme in "anyone" : they are confined to the first two lines of the stanza. This is not the case in the monotonous "my father" where the perfect rhymes can appear either in the first two lines or in the last two lines. In neither poem, however, do they appear in the middle lines.

Quantity Patterns.

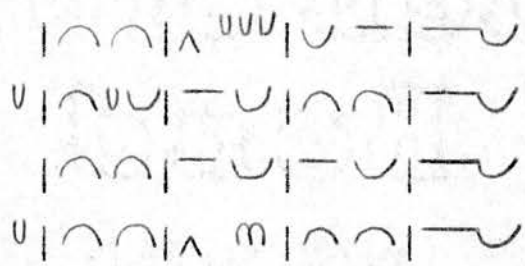
A comparison of the quantity patterns bears out the conclusions reached so far. The complete scheme for "my father is".

Stanza I

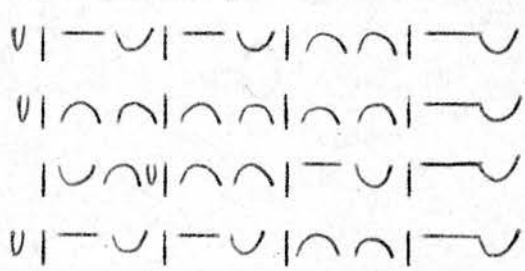
Stanza II



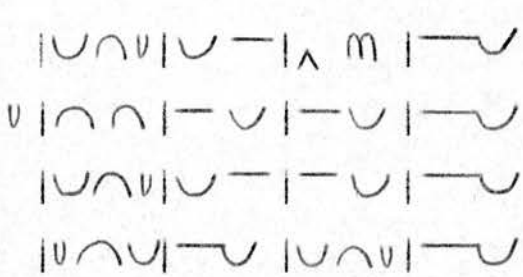
Stanza III



Stanza IV



Stanza V



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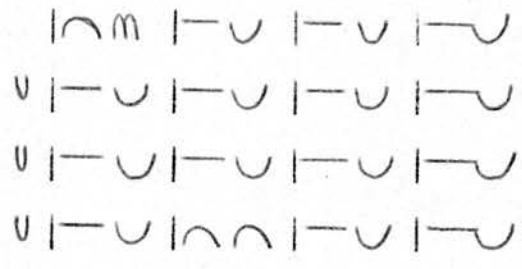

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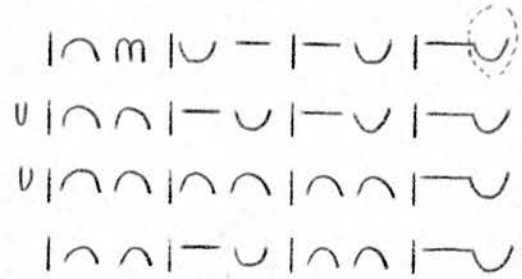

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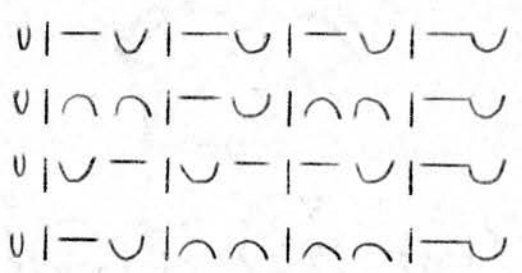

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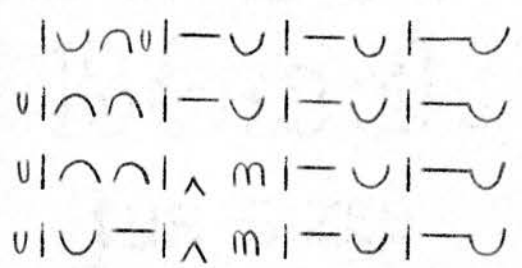
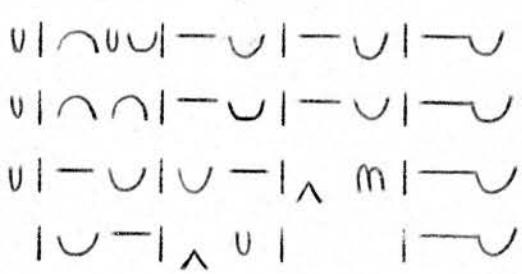


Stanza X



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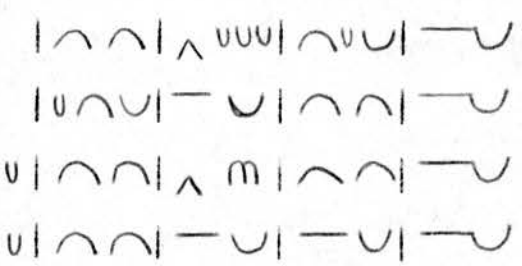
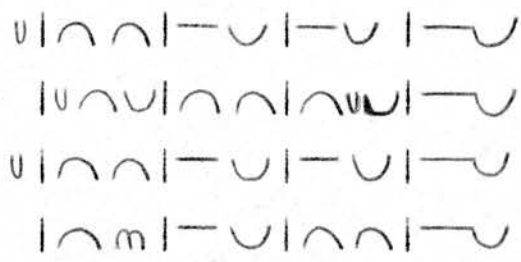
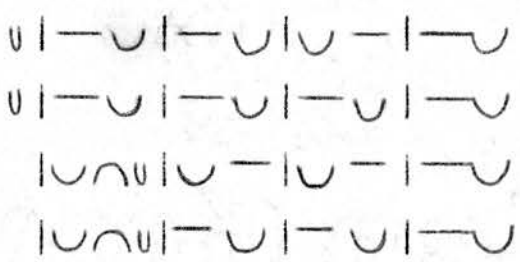


Stanza XII

Stanza XIII



Stanza XIV



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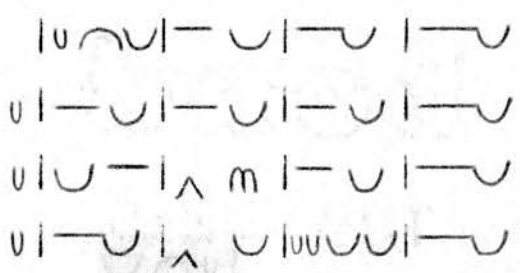

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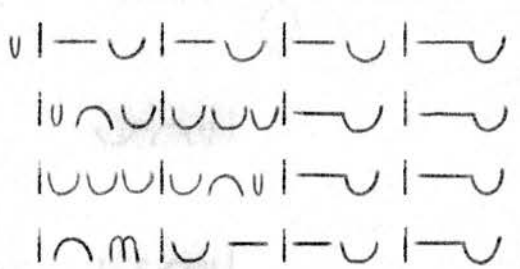
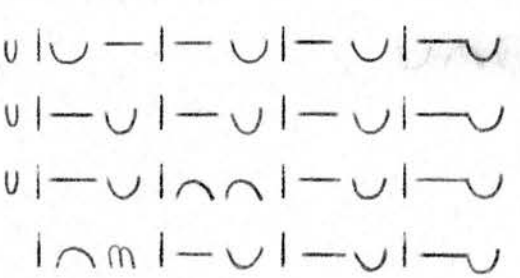
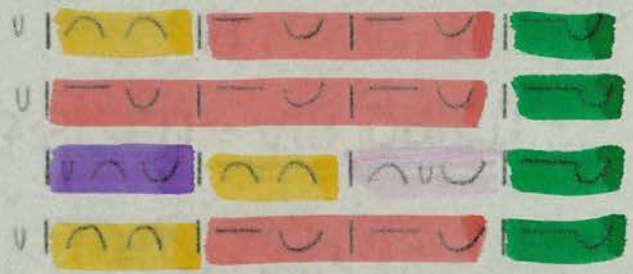


Stanza XVII



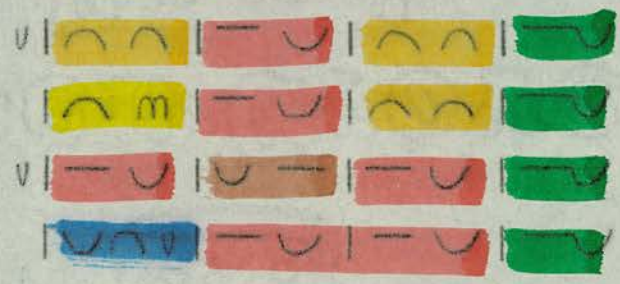
"My father moved ..." - <u>foot types: variation and repetition.</u>

Stanza I



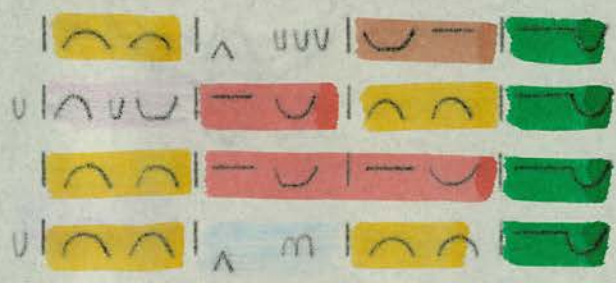
4 kinds

Stanza II



6 kinds

Stanza III



5 kinds

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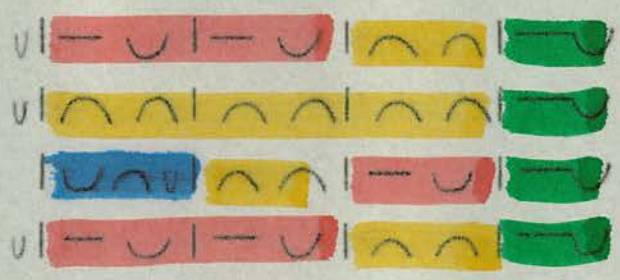

4 kinds

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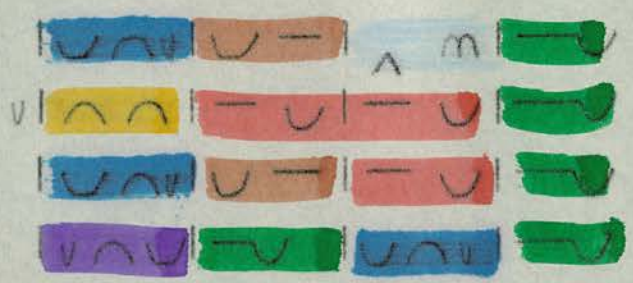

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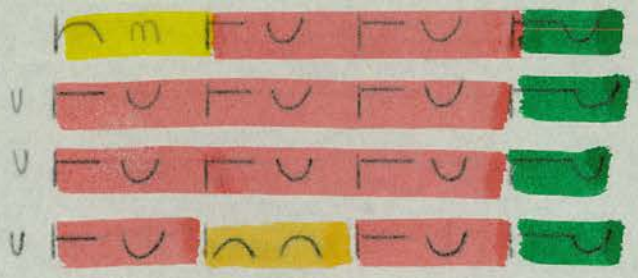

4 kinds

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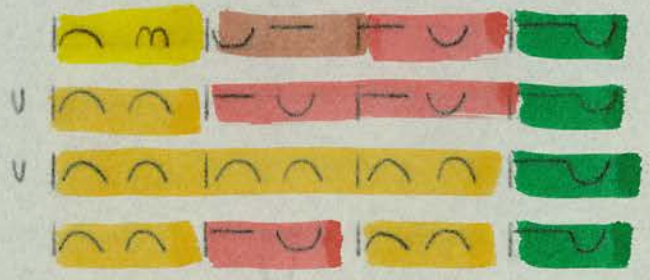
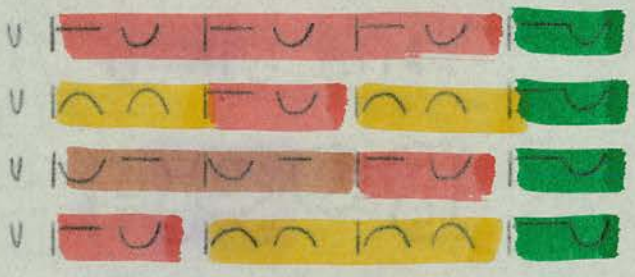


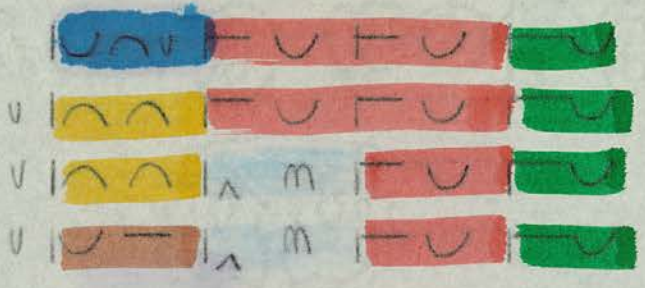
4 kinds

Stanza VIII



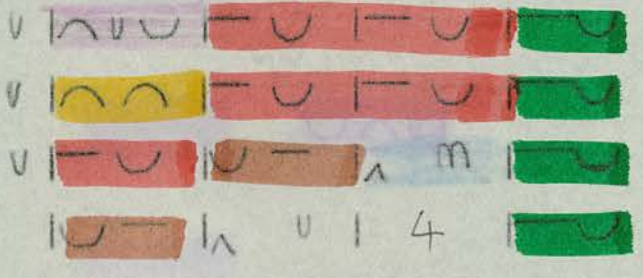
4 kinds

Stanza IX



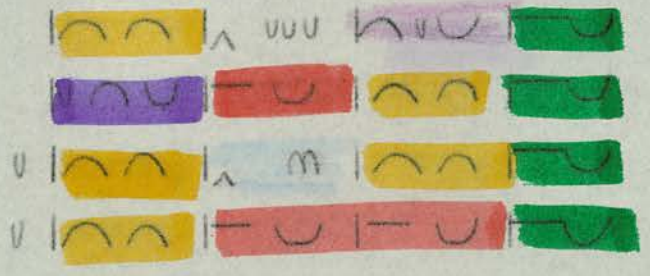
5 kinds

Stanza X



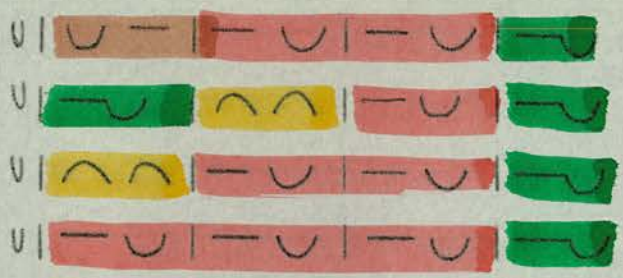
6 kinds

Stanza XI



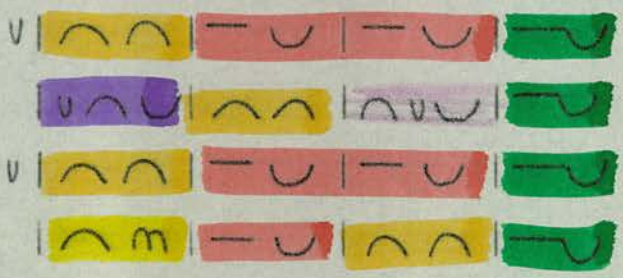
5 kinds

Stanza XII



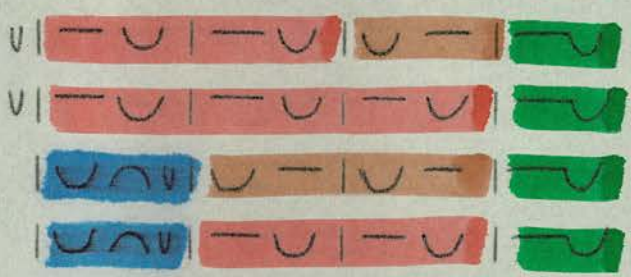
4 kinds

Stanza XIII



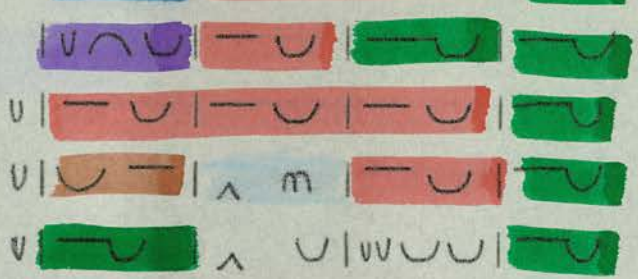
5 kinds

Stanza XIV



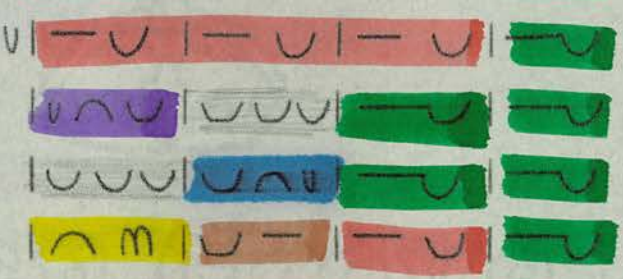
5 kinds

Stanza XV



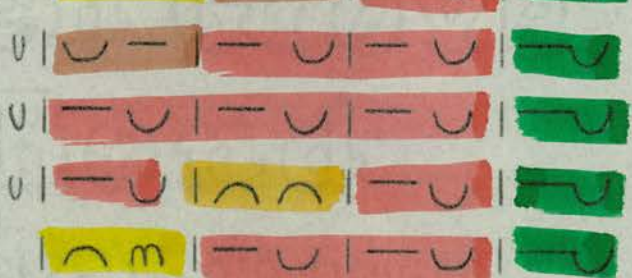
4 kinds

Stanza XVI



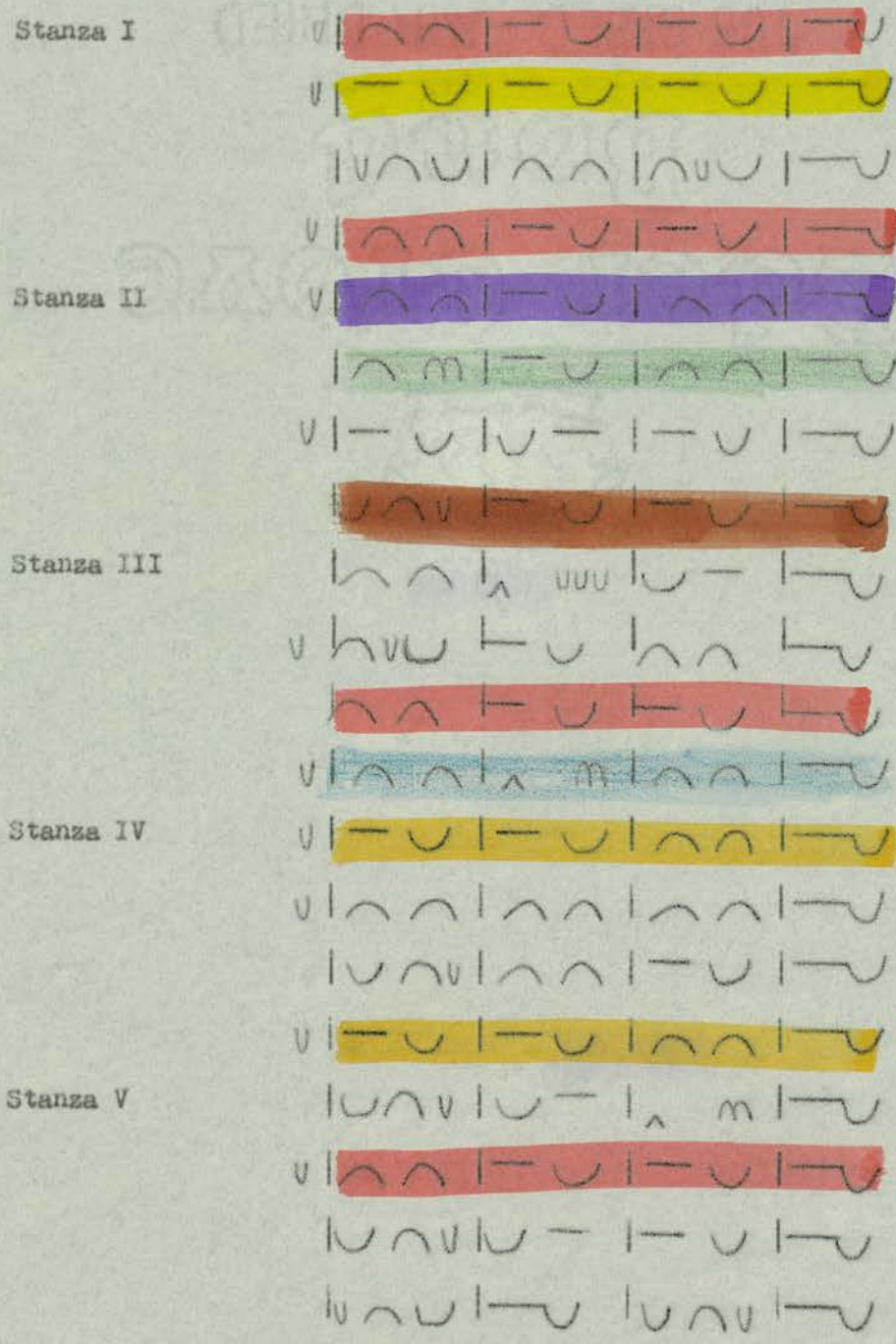
7 kinds

Stanza XVII

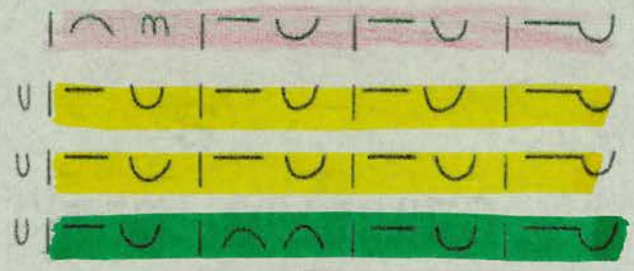


4 kinds

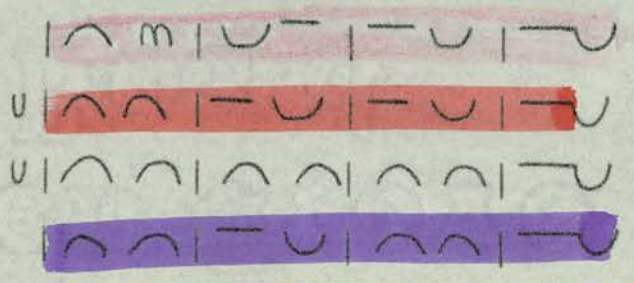
If we consider the amount of repetition that extends to whole lines, yet another picture emerges. Different colours represent different types of lines from the rhythmical point of view.



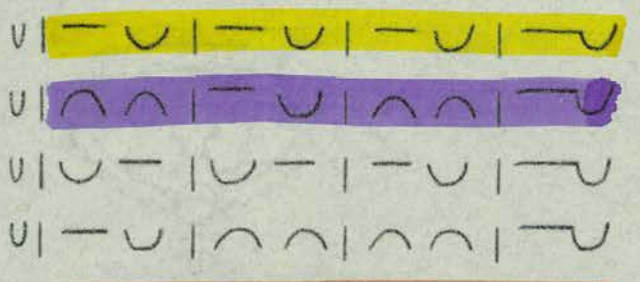
Stanza VI



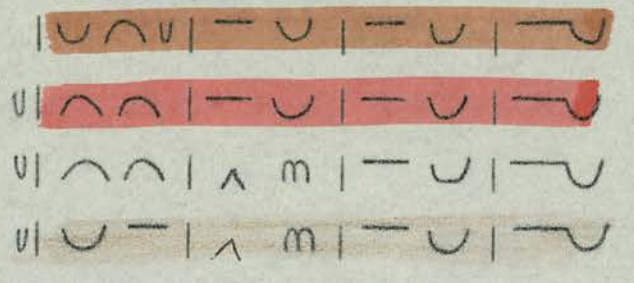
Stanza VII



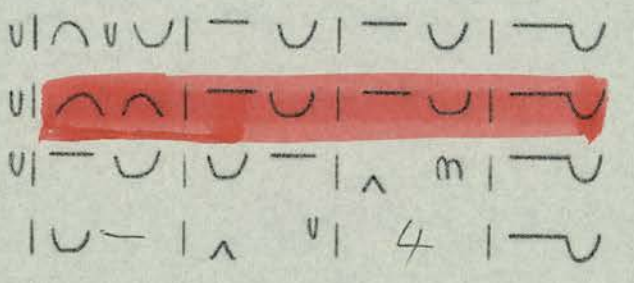
Stanza VIII



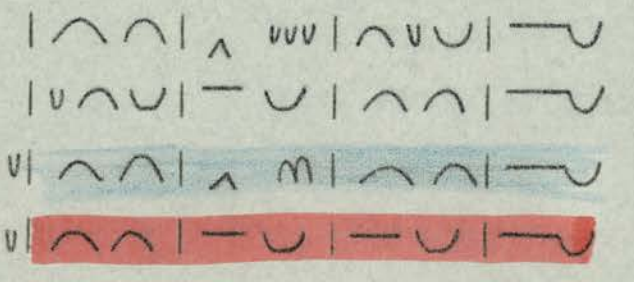
Stanza IX



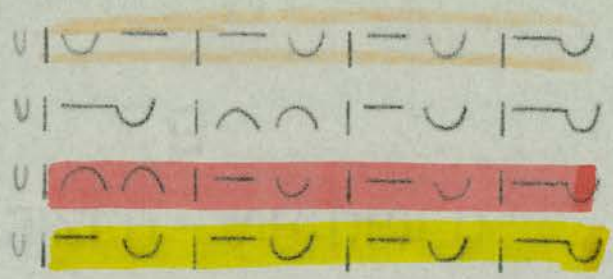
Stanza X



Stanza XI

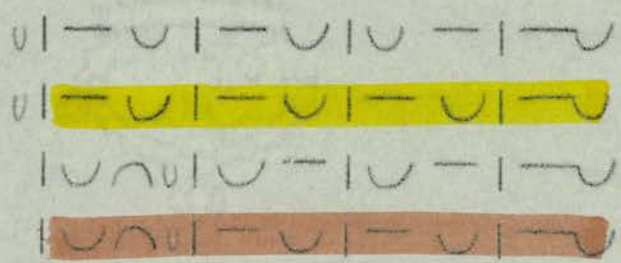


Stanza XII

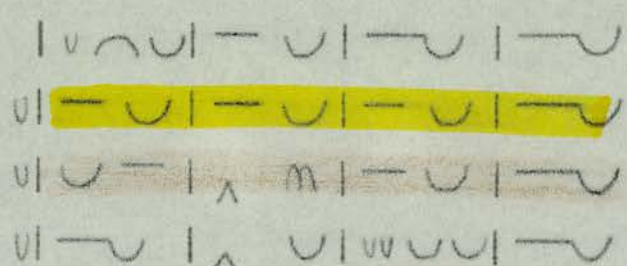


Stanza XIII

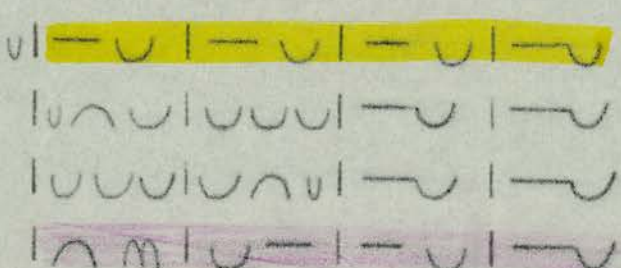
Stanza XIV



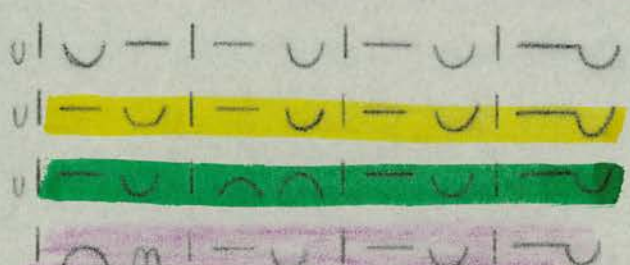
Stanza XV



Stanza XVI



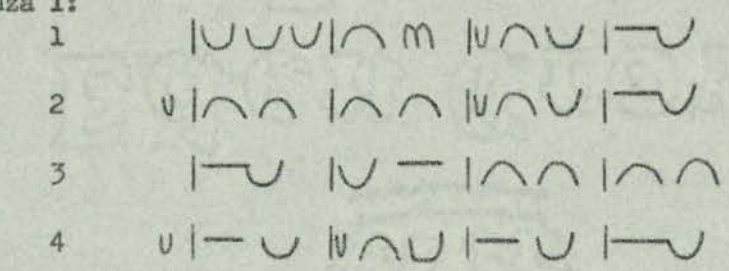
Stanza XVII



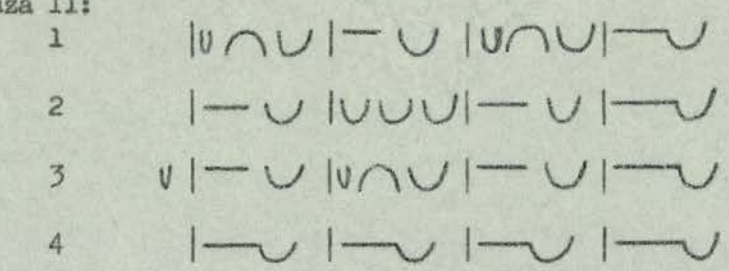
Not only is there a similarity of technique in the frequent line repetitions, but also between the quantity patterns used throughout the lines, regardless of whether they happen to function as repetitions or not within the given poem. A line in one poem may echo another line in the other poem:

"anyone lived ..." "my father ..."

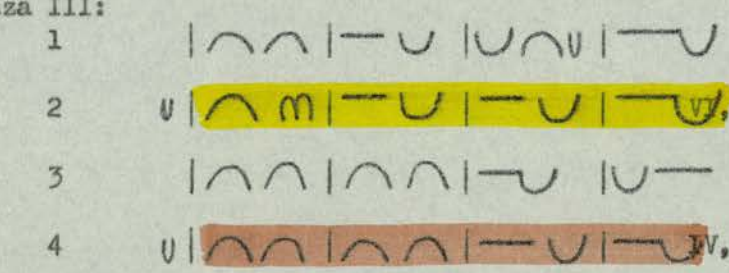
Stanza I:



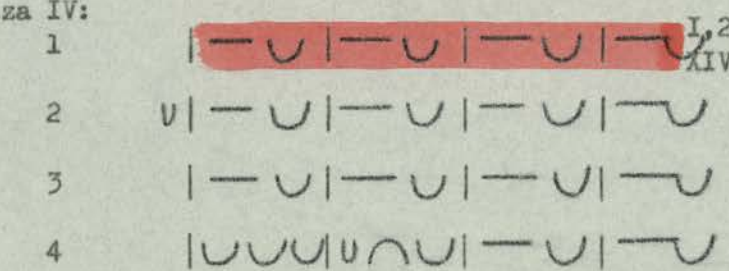
Stanza II:



Stanza III:



Stanza IV:



"anyone lived ..." "my father ..."

Stanza VI:

1 | — ⏑ | — ⏑ | — ⏑ | — ⏑

2 v | ⏑ ∧ ⏑ | ∧ m | ∧ m | — ⏑

3 ⏑ | ⏑ ∧ ⏑ | ∧ m | ∧ m | ∧ ∧

4 v | ∧ ∧ | ∧ ∧ | ⏑ ∧ ⏑ | — ⏑

Stanza V:

1 | ∧ ∧ | ⏑ ∧ ⏑ | ∧ ∧ | — ⏑

2 | — ⏑ | ⏑ ∧ ⏑ | — ⏑ | — ⏑

3 | — ⏑ | — ⏑ | — ⏑ | — ⏑

4 | — ⏑ | ⏑ ∧ ⏑ | — ⏑ | — ⏑

Stanza VII:

1 | ∧ ∧ | ⏑ ⏑ ⏑ | — ⏑ | — ⏑

2 ⏑ | ∧ ∧ | — ⏑ | — ⏑ | — ⏑ I,1,4; III,3; V,2;VII,2; IX,2;X,2;XI,4;XII,3;XIII,1

3 | ⏑ ∧ ⏑ | ⏑ ⏑ ⏑ | — ⏑ | — ⏑ cf. XVI,2

4 | ⏑ ∧ ⏑ | ⏑ ∧ ⏑ | — ⏑ | — ⏑

Stanza VIII:

1 | — ⏑ | — ⏑ | — ⏑ | — ⏑ see stanza IV,1

2 ⏑ | — ⏑ | — ⏑ | — ⏑ | — ⏑

3 | ⏑ ∧ ⏑ | ⏑ ⏑ ⏑ | — ⏑ | ∧ ∧

4 | — ⏑ | ⏑ ∧ ⏑ | — ⏑ | — ⏑

Stanza IX:

1 | ⏑ ∧ ⏑ | — ⏑ | — ⏑ | — ⏑

2 | ⏑ — | ∧ ∧ | ∧ ∧ | — ⏑ cf. VIII,4

3 | — ⏑ | ⏑ ∧ ⏑ | — ⏑ | — ⏑

4 | — ⏑ | — ⏑ | — ⏑ | — ⏑

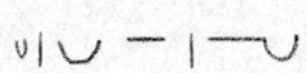
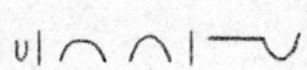
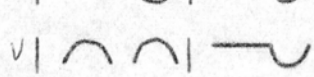
It is interesting to note that four lines with their exact quantity pattern are repeated in "my father", achieving a total of 20

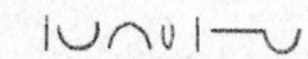
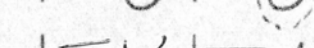
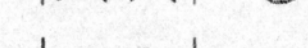
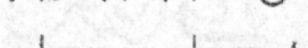
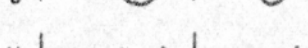
repetitions. These patterns form the typological core in "my father" and are based on modifications which are productive throughout the poem. The principles on which they operate are discussed in the next section.

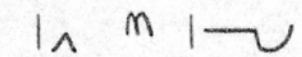
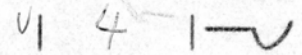
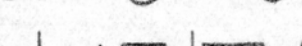
Line-end Markers.

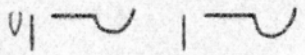
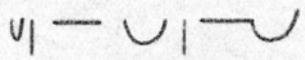
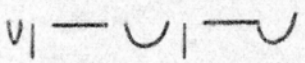
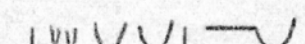
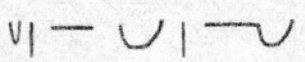
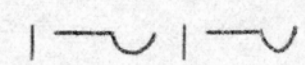
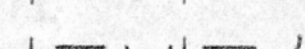
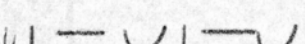
As in the survey of "anyone lived in a pretty how town" I shall now list all the line-end markers with their respective text and then compare the variety of feet that can occur in that position.

"my father ..."

Stanza	Text	Quantity Pattern
I	through | dooms of | love	
	through | haves of | give	
	| out of each | night	
	through | depths of | height	
II	for- |getful | where	
	to | shining | here	
	| air is | firm	
	would | stir and | squirm	
III	un-|buried | which	
	his| april | touch	
	to | swarm their | fates	
	to their | ghostly | roots	
IV	com-| pletely | weep	
	| brought her | sleep	
	| voice might | cry	
	the | mountains | grow	

Stanza	Text	Quantity Pattern
V	| of the | sea	
	through | griefs of | joy	
	| called the | moon	
	| into be-|gin	
VI	and | joy so | pure	
	by | him could | steer	
	and | now so | yes	
	| would re-|joice	
VII	| keen be-|yond	
	| sun will | stand	
	| utmost | him	
	my | father's | dream	
VIII	his | blood was | blood	
	but | wished him | food	
	| creep one | mile	
	| see him | smile	
IX	of | must and | shall	
	through | dooms of | feel	
	as | right as | rain	
	as | green as | grain	

Stanza	Text	Quantity Pattern
X	of | year ex-|tend	
	to | foe and | friend	
	| and to | wise	
	im-|measurable | is	
XI	oc-|tobering | flame	
	will | downward | climb	
	im-|mortal | work	
	a-|gainst the | dark	
XII	as | true as | bread	
	| in the | head	
	be-|came his | foe	
	a | world with | snow	
XIII	through | days of | we	
	| out of each | tree	
	was | sure that | spring	
	my | father | sing	
XIV	which | cannot | share	
	be | mud and | mire	
	| passion | willed	
	that's | bought and | sold	

Stanza	Text	Quantity Pattern
XV	and | cruel | kind	
	to | doubt a | mind	
	di-|sease of | same	
	| pinnacle of | am	
XVI	we | taste as | bright	
	| things | sweet	
	| dumb | death	
	| all be|queath	
XVII	so | least as | truth	
	were | why men | breathe	
	| lived his | soul	
	and | more than | all	

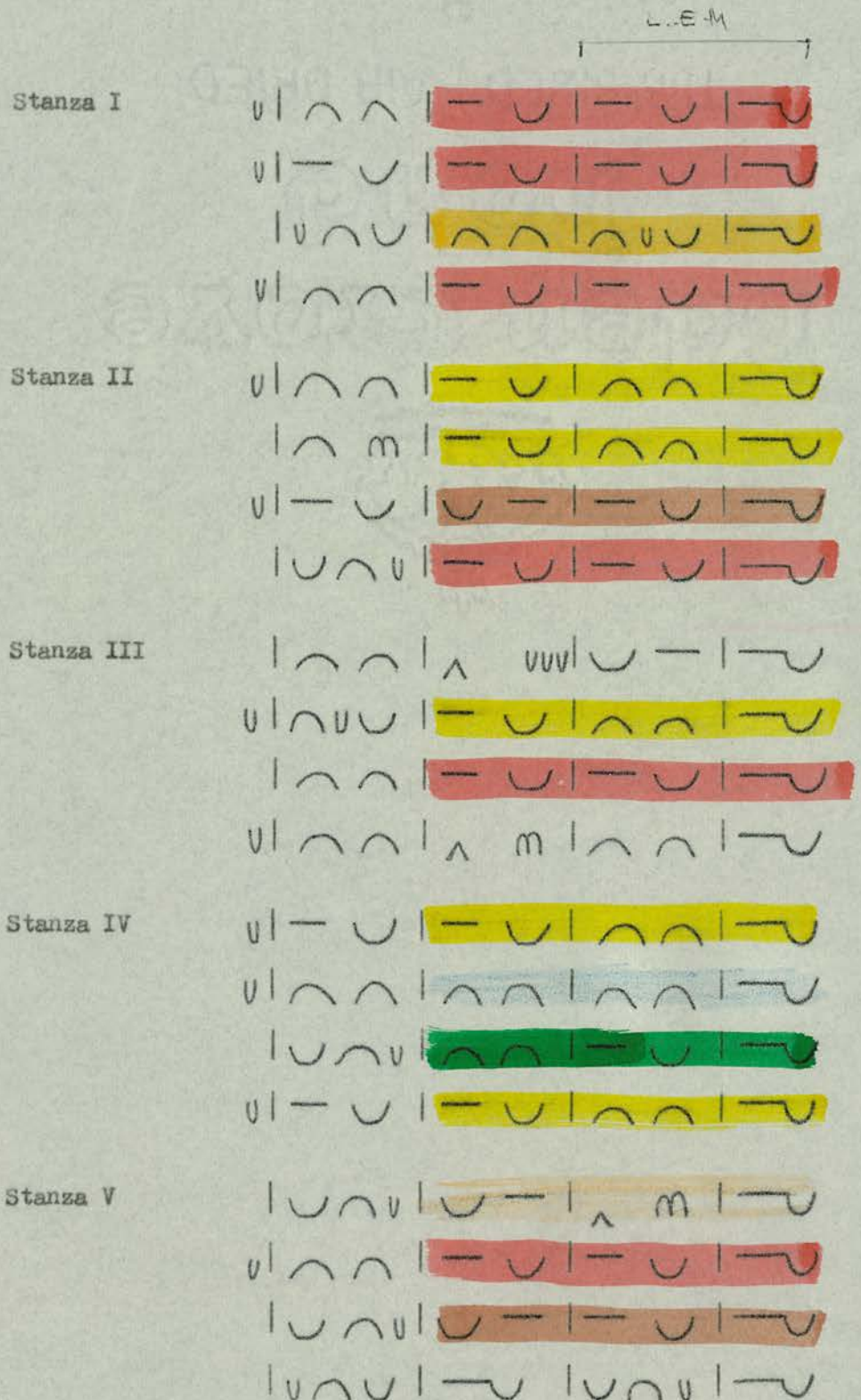
Comparative frequency count:	"my father"	"anyone"
total number of lines	68	36
3 syllable line-end markers:	4	7
2 syllable line-end markers:	57 (2 with initial pause)	25
1 syllable line-end marker:	3	4
4 syllable line-end markers:	2	0

		"my father"	"anyone"
Three-syllable feet	Patterns employed	4	5
|⏜ m|		3x 2x	2x
|⏡⏜⏡|		1x 1x	1x
|⏡⏜⏡|		0 0	4x
|⏜⏡⏡|		1x 1x	0

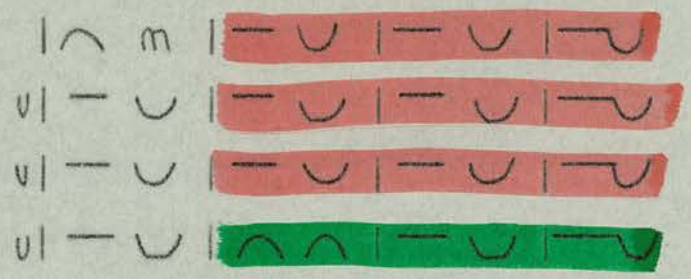
Two-syllable feet: all possible patterns in <u>both</u> poems

|— ⏡|		40x 42x	2x
|⏜⏜|		13x 12x	3x
|⏡ —|		3x 4x	0

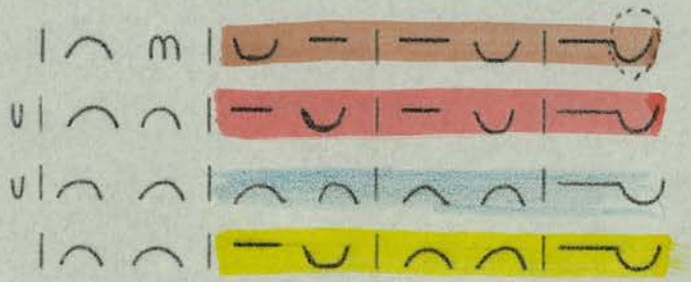
The examination of repetition can now be extended to cover line-end Markers.



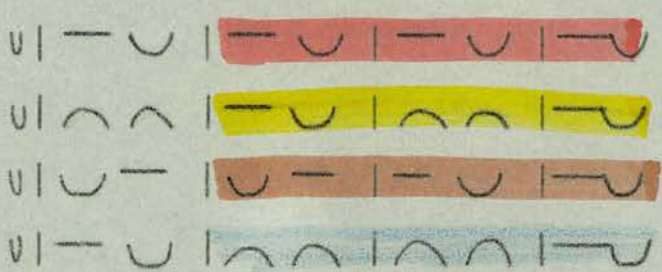
Stanza VI



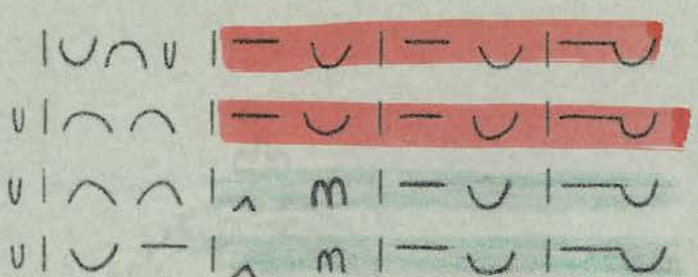
Stanza VII



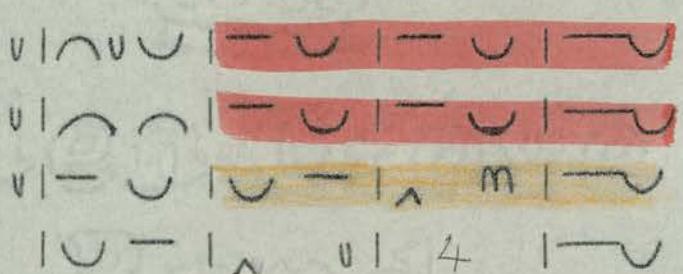
Stanza VIII



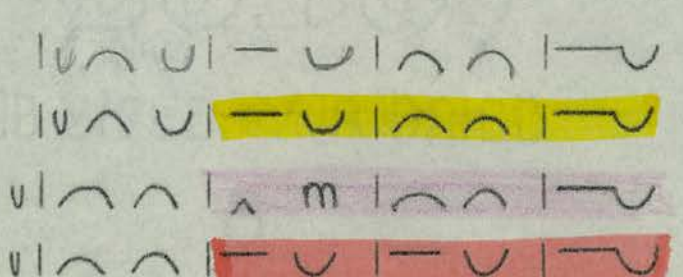
Stanza IX



Stanza X

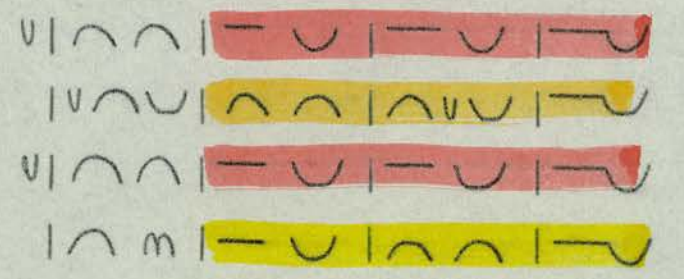


Stanza XI

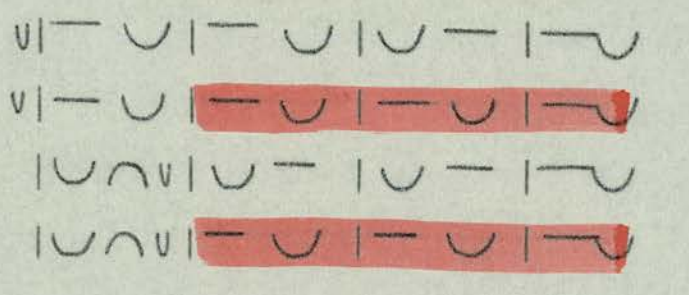


Stanza XII

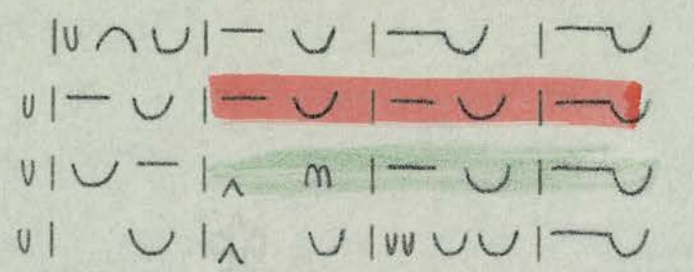
Stanza XIII



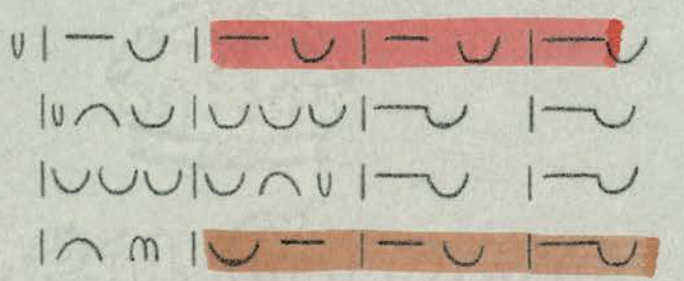
Stanza XIV



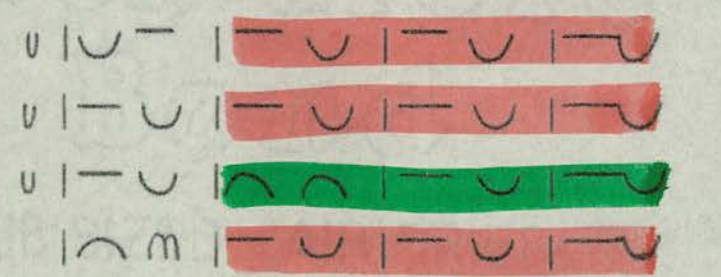
Stanza XV



Stanza XVI



Stanza XVII

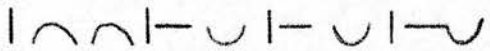


PATTERNS and MODIFICATIONS.

TYPOLOGY

Having shown graphically the extent to which repetition is allowed to take place in this poem, I should now like to look at the productive patterns and their modifications in the course of the poem. I shall combine the repetitive aspect with an analysis of modifications in the order in which they appear; whenever a particular modification is of a repetitive kind, I shall enumerate its later occurrences before proceeding to the next type of modification.

Two-syllable feet

Basic Pattern: 

Stanza: I,1	Text:	my | father | moved through|dooms of | love
I,4		my | father | moved through|depths of| hight
III,3		drove | sleeping| selves to| swarm their | fates
V,2		my | father | moved through| griefs of | joy
VII,2		con |ceiving| mind of | sun will | stand
IX,2		my | father |moved through | dooms of | feel
X,2		less | humbly | wealth to | foe and | friend
XI,4		his | shoulders | marched a|gainst the | dark
XII,3		if | every | friend be|came his | foe
XIII,1		my | father | moved through | theys of | we
XIII,3		and | every | child was | sure that | spring

Modified into the following types:

1st Modification: |— ⏑ |— ⏑ |— ⏑ |— ⏑

Stanza: I,2	Text:	through|sames of | am through|haves of | give
VI,2		a| heart of | star by| him could | steer
VI,3		and| pure so | now and | now so | yes
VIII,1		his|flesh was| flesh his|blood was | blood
XII,4		he'd| laugh and | build a| world with | snow
XIV,2		let | blood and | flesh be| mud and | mire
XV,2		a | heart to | fear,to | doubt a | mind
XVI,1		though| dull were | all we | taste as | bright
XVII,2		| say though| hate were | why men| breathe

2nd Modification: |⏜ ⏜|— ⏑ |⏜ ⏜ |— ⏑

Stanza: II,1		so| hugely | stood my | father's| dream
VII,4		this| motion|less for|getful | where
VIII,2		no| hungry | man but| wished him | food

3rd Modification: |— ⏑ |⏑ — |— ⏑ |— ⏑

Stanza: II,3		that| if (so | timid | air is | firm

Transitional pause-modifications: [1]

a) |— ⏑ |⏑ — |^ m |— ⏑

Stanza: X,3		than| he to |foolish | ^and to | wise

1. The order of presentation was not followed here; the patterns were grouped according to similarity.

b) |⏑ — |^ m |— ⏑ |—⏑

Stanza: IX,4 his | pity |^was as | green as | grain

XV,3 to | differ |^a di|sease of | same

c) |⏑ — |^ ⏑⏑ |⏑ — |—⏑

Stanza: X,4 | offered |^ im|measurable | is

d) |⌒ ⌒ |^ ⏑⏑⏑ |⏑ — |—⏑

Stanza: III, 1 | newly |^ as from un|buried | which

e) |⌒ ⌒ |^ m |⌒ ⌒ |—⏑

Stanza: III,4 woke | dreamers |^ to their | ghostly | roots

XI,3 so | naked |^ for im|mortal | work

f) |⌒ ⌒ |^ m |—⏑ |—⏑

Stanza: IX,3 his | anger |^ was as | right as | rain

<u>4th Modification</u>: |— ⏑ |— ⏑ |⌒ ⌒ |—⏑

Stanza: IV,1 and | should some | why com|pletely | weep

IV,4 for | he could | feel the | mountains | grow

<u>5th Modification</u>: |⌒ ⌒ |⌒ ⌒ |⌒ ⌒ |—⏑

Stanza: IV,2 my | father's | fingers | brought her | sleep

VII,3 so | strictly | over | utmost | him

6th Modification: |— ⏑ | ⌒ ⌒ | — ⏑ | — ⏑

Stanza: VI,4 the | wrists of | twilight | ~~would re~~ | joice

XVII,3 be | cause my | father | lived his | soul

7th Modification: | ⏑ — | ⏑ — | — ⏑ | — ⏑

Stanza: VIII,3 no | cripple | wouldn't | creep one | mile

8th Modification: | — ⏑ | ⌒ ⌒ | ⌒ ⌒ | — ⏑

Stanza: VIII,4 up | hill to | only | see him | smile

9th Modification: | ⏑ — | — ⏑ | — ⏑ | — ⏑

Stanza: XII,1 his | sorrow | ~~was as~~ | true as | bread

XVII,1 and | nothing | quite so | least as | truth

10th Modification: | — ⏑ | ⌒ ⌒ | — ⏑ | — ⏑

Stanza: XII,2 no | liar | looked him | in the | head

11th Modification: | — ⏑ | — ⏑ | ⏑ — | — ⏑

Stanza: XIV,1 the | let men | kill which | cannot | share

The shaded areas indicate places where a silent stress would occur in a less emphatic rendering.

Typology

Two-syllable patterns.

This list of modifications shows a great quantitative variety within the two-syllable patterns. It remains now to classify the different types of modification and to indicate the principles on which they are based as well as the relations between the various types.

Looking at the basic type | ⏜ ⏜ | — ◡ | — ◡ | — ◡ , we notice that it has a corresponding "reversed" version in the 4th Modification, and a further variation with a positional shift by one element, in the 6th Modification:

Type I: | ⏜ ⏜ | — ◡ | — ◡ | — ◡ 1st Basic pattern

Type II: | — ◡ | — ◡ | ⏜ ⏜ | — ◡ 4th Modification

Type III: | — ◡ | ⏜ ⏜ | — ◡ | — ◡ 6th Modification

| ⏜ ⏜ | in position: I,II,III.

Of the three quantity patterns possible within two-syllable feet, | — ◡ | and | ⏜ ⏜ | are employed here.

The second group of patterns uses | ⏜ ⏜ | in the way in which | — ◡ | was used in the above group. The underlying types are preserved with a quantity reversal by two feet, from | — ◡ | — ◡ | to | ⏜ ⏜ | ⏜ ⏜ |, giving the corresponding patterns:

Type Ia |— ⏑ |⏜ ⏜ |⏜ ⏜ |— ⏑̃ 8th Modification

if "her" in stanza IV,2

Type IIa |⏜ ⏜ |⏜ ⏜ |— ⏑ |— ⏑̃ is interpreted as non-enclitic

Type IIIa |⏜ ⏜ |— ⏑ |⏜ ⏜ |— ⏑̃ 2nd Modification

|— ⏑ | in position: I, II, (III).

Both the above kinds of quantity can each fill the whole pattern as in:

Type IV: |— ⏑ |— ⏑ |— ⏑̃ | 1st Modification

Type IVa: |⏜ ⏜ |⏜ ⏜ |⏜ ⏜ |— ⏑ 5th Modification

The third possible quantity pattern |⏑ — | has a limited application here: there is no corresponding type IVb. However, all three possible types within the typological scheme suggested above are realized with this quantity pattern:

Type Ib: |⏑ — |— ⏑ |— ⏑ |— ⏑̃ 9th Modification

Type IIb: |— ⏑ |— ⏑ |⏑ — |— ⏑̃ 11th Modification

Type IIIb: |— ⏑ |⏑ — |— ⏑ |— ⏑̃ 3rd Modification

|⏑ — | in position: I,II,III.

Type IIb Reversed or IIc:

|⏑ — |⏑ — |— ⏑ |— ⏑̃ 7th Modification

The remaining combinations are missing: two from type II, three from type I and III.

It is now easy to infer the basic principle behind the construction of these patterns: either one type of quantity is repeated throughout all 2-syllable feet within a line (there are restrictions here: only two of the possible patterns can appear |— ⏑| or |⏜⏜|, excluding |⏑ —|) or two patterns can be combined. Positional shifts within the elements concerned permit a greater variety of types (see preceding page) but not all quantity combinations are employed within them.

A few patterns with pauses remain to be discussed. Certain limited but illuminating correspondences can be traced within them as well. Taking the two patterns:

|— ⏑ |⏑ — |∧ m |— ⏑ Modification 3a

|⏑ — |∧ m |— ⏑ |— ⏑ Modification 3b

we notice that the relationship between them is one that involves three positional shifts. This fact may be held responsible for the difficulty in hearing these patterns as related. However, if we look at these patterns as related to Type IIIb and Type Ib respectively, then the correspondence becomes clear:

Type IIIb |— ⏑ |⏑ — |— ⏑ |— ⏑

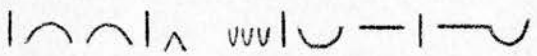
Mod. 3a |— ⏑ |⏑ — |∧ m |— ⏑

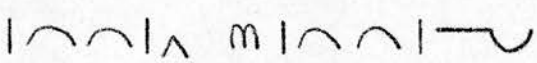
Type Ib |⏑ — |— ⏑ |— ⏑ |— ⏑

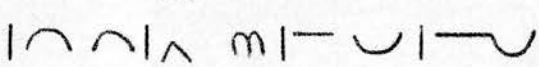
Mod. 3b |⏑ — |∧ m |— ⏑ |— ⏑

In both these cases only one modification, pause (silent stress) modification, takes place; the remaining elements are preserved and consequently there is no difficulty in hearing the patterns as related, unlike the preceding combination of the two patterns with pauses.

There are three more patterns with pauses:

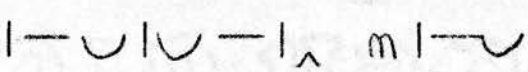
1)  Modification 3d

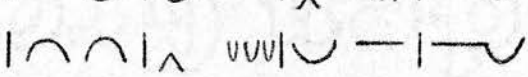
2)  3e

3)  3f

They are all alike in the first foot, very similar in the second, pause-foot (i.e. a foot beginning with a silent stress)and differ only in the third foot where all three possible quantity patterns are employed.

Pattern 1) (Mod. 3d) is somewhat reminiscent of Modification 3a:

 Mod. 3a

 Mod. 3d

There is one Quantity change, in the first foot, and one positional shift with a slightly augmented pause. It seems that this shift feels auditorily less remote than the previous one involving three positional shifts.

Pattern 2) (Mod. 3e) is strongly reminiscent of Type IIIa; on examination it can be discovered that one modification has taken place: the substitution of a pause-initiated foot for a filled foot.

Pattern 3) (Mod. 3f) like the preceding pattern, can be regarded as related to either Type I.

There is one more modification on our list, namely Modification 10. This repeats in the initial foot the monosyllabic foot already employed in the line-end marker. The modification is not productive and appears only once.

Three-syllable feet.

The next step will be to compare in a similar way all lines containing 3-syllable feet, listing them first in order of appearance.

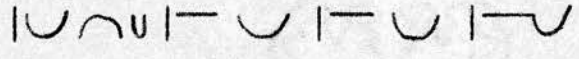
Pattern: 1

Stanza I,3 Text: | singing each | morning| out of each| night

Pattern: 2

Stanza II,2 | turned at his | glance to| shining | here

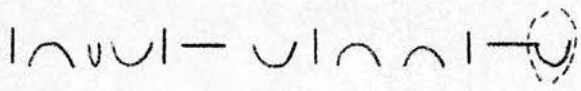
XIII,4 | danced when she | heard my |father | sing)

Pattern: 3 

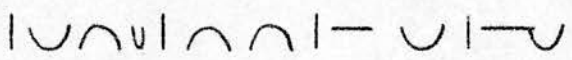
Stanza II,4 | under his | eyes would | stir and | squirm

IX,1 | Scorning the | pomp of | must and | shall

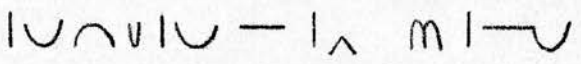
XIV,4 | freedom a | drug that's | bought and | sold

<u>Pattern</u>: 4 

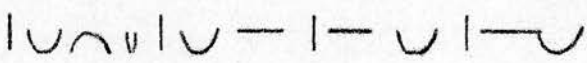
Stanza III,2 Text: | floats the first | who, his | april|touch

<u>Pattern</u>: 5 

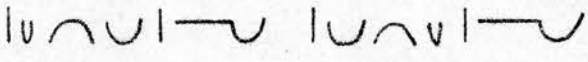
Stanza IV,3 | vainly no | smallest | voice might | cry

<u>Pattern</u>: 6 

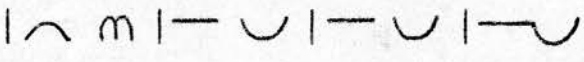
Stanza V,1 | Lifting the | valleys |^ of the | sea

<u>Pattern</u>: 7 

Stanza V,3 | praising a | forehead | called the | moon

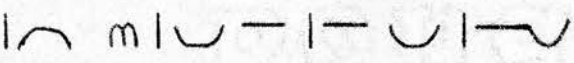
<u>Pattern</u>: 8 

Stanza V,4 | singing de|sire | into be|gin

<u>Pattern</u>: 9 

Stanza VI,1 | joy was his | song and | joy so | pure

XVII,4 | love is the | whole and | more than | all

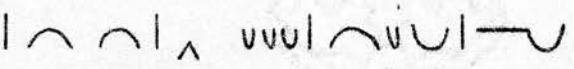
<u>Pattern</u>: 10 

Stanza VII,1 | keen as mid|summer's | keen be|yond

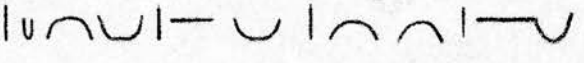
XVI,4 | all we in|herit | all be|queath

<u>Pattern</u>: 11

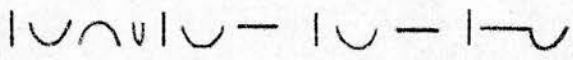
Stanza X,1 sep|tembering | arms of | year ex|tend

<u>Pattern</u>: 12 

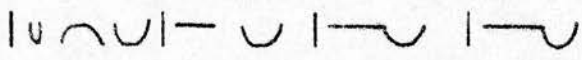
Stanza XI,1 | proudly |^ and by oc|tobering | flame

<u>Pattern</u>: 13 

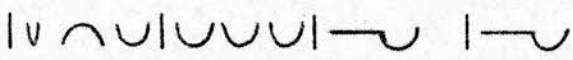
Stanza XI,2 | beckoned) as | earth will| downward | climb

Pattern: 14 

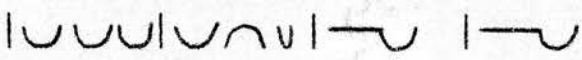
Stanza XIV,3 Text: | scheming i|magine, | passion | willed,

Pattern: 15 

Stanza XV,1 | giving to | steal and | cruel | kind

Pattern: 16 

Stanza XVI,2 | bitter all | utterly | things | sweet

Pattern: 17 

Stanza XVI,3 | maggoty | minus and | dumb | death

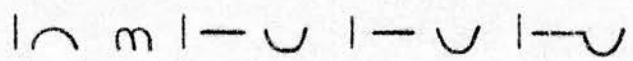
In this long list of patterns only very few are repeated. I shall group related patterns together in the same way as was done with 2-syllable feet.

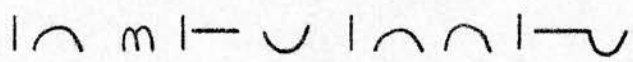
Typology

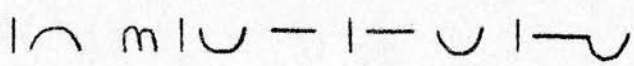
Patterns with one 3-syllable foot.

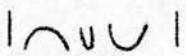
Correspondences between patterns with one 3-syllable foot and patterns with 2-syllable feet:

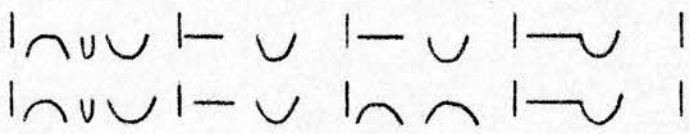
with

 (Pattern 9) cf Type I

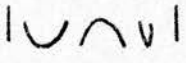
 (Pattern 2) cf Type IIIa

 (Pattern 10) cf Type IIIb

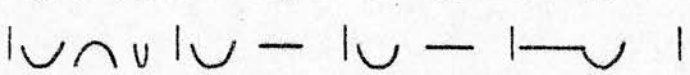
with 

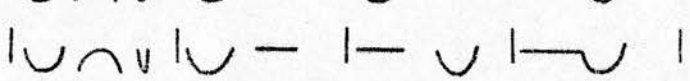
 (Pattern 11) cf Type I

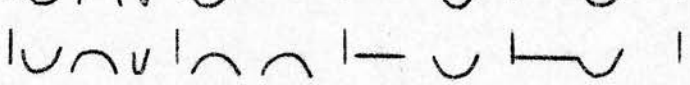
 (Pattern 4) cf Type IIIa

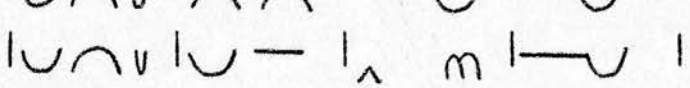
with 

(Pattern 3) cf Type I

 (Pattern 14) cf Type IR[1]

 (Pattern 7) cf Type IIIb

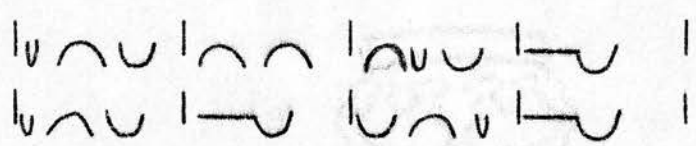
 (Pattern 5) cf Type IIIa

 (Pattern 6) cf Mod. 3a

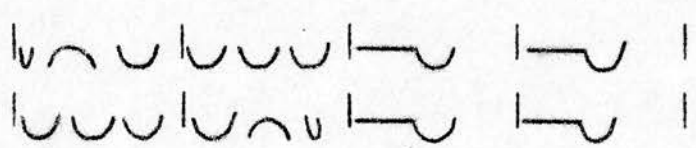
The remaining patterns, Nos. 13 and 15, are related to each other through a change involving one sub-element (-1). Pattern 13 is also related to Type IIIa.

Patterns with two 3-syllable feet.

Patterns with two 3-syllable feet show two different quantity patterns in the 3-syllable feet as in pattern 1 and 8:



In addition to this characteristic, they may share a monosyllabic foot in the corresponding position as in pattern 16 and 17:



There are no further variations to be found in this group as the number of patterns is limited to the examples given above.

1. R - reversed quantity pattern.

In conclusion, I should like to summarize the main features of repetition and change already treated in detail, by grouping them under the following headings:

Numerical change - to indicate whether a change in the number of syllables per foot has taken place

Quantity change - to show whether the quantity pattern has been altered within feet of the same number of syllables

IQP pair - to note whether two feet of identical quantity pattern (therefore of the same number of syllables per foot) appear

Positional repetition - to indicate which feet, in order of their appearance in the line are repeated. This lists the 'deep structure' features of repetition. The actual rhythmic patterns filling these positions are bound to vary; the common factors are the positions which they occupy in the line.

.... indicates non contiguous positions.

Repetition and Change in Line Transition:

Stanza:	Lines:	Numerical Change:	Quantity Change	IQP Pair:	Positional Repetition:
I	1 - 2	-	1	all three	II, III, IV
	2 - 3	(+1) ... (+1)	1	-	IV
	3 - 4	(-1) ... (-1)	1	(II↘ I)	IV

Stanza:	Lines:	Numerical Change:	Quantity Change:	IQP Pair:	Positional Repetition:
II	1 - 2	(+1)	-	-	II, III, IV
	2 - 3	(-1)	I, one shift	1	(II↘ I) IV
	3 - 4	(+1)	1	1	(I↘ II) III, IV
III	1 - 2	(+1)	1, (s filled)[1]	-	III,) IV
	2 - 3	(-1)	1	1	(III↘ I) II, IV
	3 - 4	(s)	1	1	I IV
IV	1 - 2	-	(reversal)	all three	III, IV
	2 - 3	(+1)	1	-	II, IV
	3 - 4	(-1)	(reversal)	1	(III↘ II) (II III) IV
V	1 - 2	(-1)	1, (s filled)	1	IV
	2 - 3	(+1)	1	-	III, IV
	3 - 4	(-1)(+1)	1	-	IV
VI	1 - 2	(-1)	-	all three	II, III, IV
	2 - 3	-	-	all three	I, II, IV
	3 - 4	-	1	1	I, III, IV

1. Foot beginning with a silent stress.

Stanza:	Lines:	Numerical Change:	Quantity Change:	IQP Pair:	Positional Repetition:
VII	1 - 2	(-1)	1	1	III, IV
	2 - 3	-	1	all three	I, IV
	3 - 4	-	1	1	I, III, IV
VIII	1 - 2	-	1	1	II, IV
	2 - 3	-	3	1	IV
	3 - 4	(+1)	2	1	IV
IX	1 - 2	(-1)	-	1	II, III, IV
	2 - 3	(s)	-	-	I, III, IV
	3 - 4	-	1	-	II, III, IV
X	1 - 2	(-1)	-	1	II, III, IV
	2 - 3	(s)	1	-	IV
	3 - 4	(s), (+1)(+1)	1,(s filled)	-	II, IV
XI	1 - 2	(+1) ... (-1)	(s filled)	-	IV
	2 - 3	(-1), (s)	-	1	III, IV
	3 - 4	-	1,(s filled)	1	I, IV
XII	1 - 2	(-1)	1		III, IV
	2 - 3	(+1)	1	1 (II↘I),	III, IV
	3 - 4	-	1	all three	II, III, IV
XIII	1 - 2	(+1) ... (+1)	1 (shift)	-	(I↘II) IV
	2 - 3	(-1) ... (-1)	1	1 (II↘I)	IV
	3 - 4	(+1)	1	-	II, IV

Stanza:	Lines:	Numerical Change:	Quantity Change:	IQP Pair:	Positional Repetition:
XIV	1 - 2	-	1	all three	I II IV
	2 - 3	(+1)	1 extended	1	IV
	3 - 4	-	1 extended	1	I IV
XV	1 - 2	(-1)...(+1)	-	all three	II IV
	2 - 3	(s)	1	-	III IV
	3 - 4	(-1)...(+1)(+1) (s)	-	-	IV
XVI	1 - 2	(+1)(+1)(-1)	-	1	IV
	2 - 3	-	1 shift,1	1	(II↘ I) III,IV
	3 - 4	(-1)(+1)	1	-	IV
XVII	1 - 2	-	1	all three	II, III,IV
	2 - 3	-	1	1	I, III,IV
	3 - 4	(+1)	1	1	(I↘ II) III,IV

A valid comparison can be made with "anyone" at this point by tabulating essential features of change and repetition in the way in which this was done for "my father". It will reveal how much more complex the changes are in "anyone" and show which positional combinations that were used in "my father" are also present in "anyone".

Stanza:	Lines:	Numerical Change:	Quantity Change:	IQP Pair:	Positional Repetition:
I	1-2	(-1)(-1)	-	1	III IV
	2-3	(-1)...(-1)(+1)	-	1	
	3-4	(+1)(-1)...(-1)	1	1	
II	1-2	(-1)(+1)(-1)	-	1	IV
	2-3	-	1	1	I III IV
	3-4	(-1) (-1)(-1) (-1)	-	whole line	IV
III	1-2	(+1)....(-1)	-	1	II IV
	2-3	(-1)....(-1)(+1)	1	1	
	3-4	(+1)(-1)	-	1	I II
IV	1-2	-	-	whole line	I II III IV
	2-3	-	-	whole line	I II +II IV
	3-4	(+1)(+1)	-		III IV

Stanza:	Lines:	Numerical Change:	Quantity Change:	IQP Pair:	Positional Repetition:
V	1-2	-	2	1	IV
	2-3	(-1)(-1)(-1)...(1)	-	1	III
	3-4	(+1) (+1)(+1)...(-1)	-	1	III
VI	1-2	(+1)(+1) (+1)(+1) (+1)(+1)	-	1	IV
	2-3	(1)	-	1	I II III
	3-4	(-1)(-1)	1	1	
VII	1-2	(-1)	-	1	I III IV
	2-3	(+1)(1)	-		III IV
	3-4	-	1	1	I III IV
VIII	1-2	-	-	whole line	I II III IV
	2-3	(+1)(+1)...(+1)	-	-	III
	3-4	(-1)....(-1)	1	1	III
IX	1-2	(-1)	1	1	IV
	2-3	(+1)	2	1	IV
	3-4	(-1) (-1)(-1) (-1)	-	whole line	IV

It can be seen from the above that the complexity is transferred into the <u>numerical component</u> in 'anyone ...' through a number of complicated modifications, while in 'my father ...' complexity is to be found in the <u>quantitative component</u> with its numerous modifications (substitutions and positional shifts) involving 2-syllable feet.

PART II

An instrumental analysis of one poem read by several speakers

T. S. Eliot "The Waste Land" part IV

'Rhythm is the soul of music' (Paderewski)

'Rubato is the soul of rhythm' (Gerald Moore)

An instrumental analysis of one poem read by several speakers

T.S.Eliot "The Waste Land" part IV

In this part of the thesis I have attempted to relate several readings of the poem to the scansion of it suggested by Professor Abercrombie.

It is often claimed that a variety of readings is possible for one and the same poem[1] and, by implication, scansion appears to be either undecidable or, at best, highly debatable.

It seems to me that the extent of variation is not so great or so unpredictable. Some stresses may be suppressed in certain syntactic constructions, and the preceding rhythmic patterns may influence the decision to suppress them, if the reader is more sensitive to rhythm than to lexical stress. Some syntactic constructions permit alternative readings with two feet[2] rather than one and a choice usually is possible in the number and placing of silent stresses, but, on the whole, a fair amount of agreement might be expected in stress placing.

My specific interest here is in relating the readings to the scansion, examining the foot durations, and the relations between different types of feet in terms of the number of syllables per foot, and giving information on segment duration.

1. cf. Seymour Chatman, A Theory of Meter, The Hague, 1965.
2. see introduction, The Approach and Concepts used in the thesis.

PROCEDURES, PROBLEMS AND ARBITRARY DECISIONS

Materials and Procedure:

Recordings were obtained of readings by several different readers (speech $7\frac{1}{2}$ recording I: $3\frac{3}{4}$).

Choice of readers:

Recordings I and II were made by the same reader, Professor David Abercrombie. They were made one year apart so as to eliminate any memory of the previous reading or the scansion.

Recording III is a reading by the poet himself taken from a record (Caedmon Literary Series TC 0994)

Recording IV represents an 'artistic' reading by David Lloyd-James, formerly a B.B.C. poetry reader.

Recordings V and VI were made by two B.B.C. newscasters, Alvar Lidell and Robin Holmes, who were asked to read in a fairly measured way without paying too much attention to 'expression'.

(It is understood that all these recordings are for private research only).

All the recordings were subsequently analysed on spectrograms. Spectrograms were chosen rather than mingograph tracings because of the possibility of using the information obtained in this way for speech synthesis and experiments on perception in the future.

Spectrograms

Kay Sona-Graph was used for recording I; for the remaining recordings, Kay Sona-Graph 7029A 5-16000 Hz Spectrum analyzer worked in conjunction with scale magnifier 6076C.

Wide band, 4000 cps. spectrograms were made for each speaker. For recording I, 8000 cps. wide band spectrograms were also used. Overlapping spectrograms were obtained most of the time. In a few cases, the length of the pauses made by some readers did not permit to overlap the spectrograms.

Segmentation and measurement

Measurement was first made of segment durations. These were then added together to produce appropriate foot measurements. The sum of segments was thought to be a better means of ensuring regularity in foot measurement than isolated ad hoc measurements for each foot. Segments rather than their aggregates in feet were chosen for initial measurements with a view to obtaining more information about the similarities and differences between speakers. This information, when further extended, may prove of service in the investigation of segment quantity, syllable quantity and the effects of tempo changes on them.

The segmental material obtained here is not regarded as sufficiently large or varied (phonetic frames !) to provide a basis for conclusive judgements.

I am aware of the problems that the concept of segmentation involves [3] and of the technical difficulties which arise in segmenting

3. cf. G.E.Petersen's discussion of the difficulties of segmentation in Language, 31. 414-427 (1955); also G.E. Peterson and I. Lehiste, in The Journal of Acoustical Society of America, vol. 32, No. 6, 693-70, June, 1960.

spectrograms. I have attached below a list of arbitrary decisions which I made in segmenting the spectrograms of the six recordings.

The segmentation of spectrograms - arbitrary decisions.

I have made the following arbitrary decisions in segmenting the spectrograms:

1. The duration of vowels in post-pausal positions was measured from the onset of voicing.
2. Pre-pausal releases of plosives were included in the duration of the pause.
3. Individual segments:

/w/ Most of the time this was unsegmented from the following vowel. On occasions measurement was made, including the steady state and the following transition in the length of /w/. This was done when there was a clear onset of all formants above F_1 in the following vowel.

After voiceless fricatives, the period of voiceless /ʍ/ was given a separate measurement, and was included in the total length of the segment.

/r/ Measurement was made of the voiceless variant, the voiced one was not segmented from the following vowel.

The tap between vowels was 'segmented' on the basis of the discontinuity of all formants and a characteristic 'dip' following this before the emergence of a new formant pattern for the next vowel.

Where evidence was not sufficiently clear, no segmentation was attempted.

/l/ Arresting dark /l/ , where possible, was segmented from the preceding vowel according to a change in F_1 and F_2 and a discontinuity in the formants above F_2.

When preceded by a voiceless fricative, measurement was made from the onset of voicing.

/j/ was left unsegmented except in one case.

Stops preceded by pause: only aspiration was measurable (similarly, some affricates in this position could only be measured from the affrication.)

4. Sound combinations:

/kt/ was left unsegmented most of the time. It was segmented only when the spectrograms showed evidence of a release of /k/.

/td/ Most of the time these were impossible to segment from each other; otherwise the length of the release of /d/ was measured or the onset of voicing for /d/

/tn/ /n/ was measured from the characteristicspike on the on the spectrogram.

/tð/ Assimilation of voicelessness; measurement was made from the presence of voicing in /ð/.

/nd/ Segmentation was carried out following the disappearance of formant structure.

/nt/ see above, also the onset of voicelessness.

/nð/ Measurement was made from the disappearance of formant structure.

/ndð/ Listeners perceived evidence of /d/ in this combination - in most cases this could not be segmented from the surroundings.

/ndl/ Segmentation was carried out according to the appearance of formant structure in the /l/ preceding a vowel, or according to the evidence of the release of /d/

Very often it was not possible to segment /ð/ from the following /ə/

5. In some speakers whispered vowels were noticed before a following voiceless fricative. The duration of the vowel was then given in two figures connected by a plus sign which correspond to the period of voicing and whisper.

Accuracy of measurement

Measurements were made to the nearest centisecond. If a given segment was less than half a centisecond longer, measurement was made to the nearest centisecond below. If a given segment was more than half a centisecond longer, then measurement was rounded up to the nearest centisecond.

Feet. Types of measurement

According to the approach adopted, feet are measured from stress to the next stress, but not including it. This immediately raises several problems:

(i) of general nature:

a) the identification of stress

b) the domain of stress placement

(ii) the difficulty of obtaining a reliable measurement:

a) when a stress falls on silence[3]

b) when the expected silent stress is not realized as silence[4]

With reference to (i)a), the most up-to-date account to my knowledge is provided in chapter IV "Stress" in I. Lehiste, Suprasegmentals, M.I.T. Press, 1970.

In the identification of stress I have used the factors discussed by Lehiste (especially p. 119) and was further helped by the points of reference provided by the scansion I was using.

Ad (i)b) Again, I wish to refer to Lehiste (p. 147): "From what is known of the activity of intercostal musculature, it appears probable that the smallest unit that may carry stress must be approximately the size of a syllable." Further, "The muscular gesture that underlies

3. see D. Abercrombie, "A phonetician's view of verse structure", Studies in Phonetics and Linguistics, O.U.P., 1965.
also D. Abercrombie, "Some Functions of Silent Stress", in Edinburgh Studies in English and Scots, Longman, 1971.

4. "Silent stress may sometimes take a form which is not, strictly speaking, silent: the final sound of the preceding syllable may be prolonged over the space they occupy. This prolongation appears to be in free variation with silence, though it is more common with some people than others. It is, however, curious that emphatic and rhetorical silent stresses seem always to be really silent." (Abercrombie, "Some Function of Silent Stress", op.cit., p. 155.)

stress production requires a certain time for its realization, and there are time delays in the system that make it extremely unlikely that stress can be 'turned on' to coincide with the duration of a single segmental sound".

The questions that concerns us here is: from what point to measure foot duration? At what point to assume the incidence of stress? From the above it would appear, by inference, that initial consonants of stressed syllables ought to be included in the foot measurement. I have measured foot duration in this way in the first type of measurement (measurement A).

Writers on rhythm such as William Thomson[5] maintained, however, that the rhythmic beat comes on the syllabic, not the consonantal elements. He has named this rhythmically significant part a syllict.

Some phoneticians chose to ignore the initial consonants and measure from the stressed vowel[6] or to compare both ways of measurement[7] with the result that this method of measurement did not produce much difference.

I have included this type of measurement as well (measurement B).

George Allen[8] has found that the release of the consonant immediately preceding the stressed vowel played a part in the perception of rhythm.

5. William Thomson, The Rhythm of Speech, Glasgow, 1923, p. 185.

6. K. Patch, "Syllable Duration in Prose Read Aloud" Phonetics Diploma Dissertation, Edinburgh University, 1962.

7. J. D. O'Connor, "The Perception of Time Invervals", in Progress Report September, 1965, Phonetics Laboratory, University College London, pp. 11-13.

8. G. D. Allen, "On Testing for Certain Stress-Timing Effects", in Working Papers in Phonetics 10, UCLA, Los Angeles, 1968, pp.47-59.

G. D. Allen, "Two behavioural experiments on the location of the syllable beat in spoken American English", H. Lane and E. Zale (eds.) Studies in Language and Language Behaviour, Ann Arbour, Michigan, 1967, pp. 2-179.

Since in my data the release of plosives was found to occupy a very small amount of time, no separate measurement was made.

However, another factor which might possibly influence the perception of duration (though no experimental check was carried out) was taken into consideration the presence of voicing in the initial consonants of the stressed syllable.

In the third type of measurement (measurement C), voiced consonants preceding the stressed vowel (and belonging to the same syllable) were included in the measurement while voiceless consonants in this position were excluded from the measurement. This principle was applied in measuring from one stressed syllable to the next.

Ad ii) Certain complications arose when silent stresses appeared in the scansion.

In accordance with the theory of scansion used here, one expects the silent stress to coincide with the beginning of a metrical silent interval. This happens frequently, but not always. Some readers, or even the same reader, may occasionally shorten the duration of the 'speech' content in the foot which is followed by a silent stress. The silent stress in this manner of reading no longer falls on the beginning of silence, but somewhere later. The only way to solve the problem of measurement here is to calculate the estimated foot boundary by adding up the duration of the filled foot followed by a partially filled foot and divide the sum by two. This procedure has been suggested by Professor Abercrombie. The same procedure applies in cases where the silent stress is not realized as silence and instead the preceding sound is prolonged over its space.

I have produced measurements to cover all these cases.

Presentation of Results

First set of tables

Segment/Foot duration in sequence

Second set of tables

Types of foot; durations

Third set of tables

Types of feet; ratios

Fourth set of tables

Foot duration in sequence,
including estimated foot
boundaries (one example)

First set of tables. The text of the foot was given below the measurements. The corresponding text was transcribed (the symbols of the Edinburgh transcription were used here) at the top of the tables. Silent stresses, or metrical pauses, were given a separate space. Brackets appear in this row of symbols when a given recording revealed a difference in scansion at a given point. Occasionally, a blank space has been left in the top row of symbols although the actual measurement has been supplied. This has been done when a short pause appeared on the spectrogram which could be associated with a glottal onset to the following vowel, or be regarded as a means to induce a break, or a pause, or a discontinuity inside the foot.
The row of symbols corresponds to the information required for all three types of measurement A,B,C.
The remaining three columns were used for presenting foot duration according to the three types of measurement mentioned earlier.
When silent stresses appeared in the scansion, the duration of 'speech' was enclosed in square brackets and presented at the top of the box.
A horizontal line has been drawn across the box to give the expected foot duration after the estimated foot boundary had been calculated according to the procedure described earlier. A separate table was then added for comparison. This was to repeat the foot initiated by a silent stress, measuring from the beginning of the pause.
In all the measurements involving silent stresses, the 'speech' content of the foot was presented in square brackets.
I now give the scansion which was used in producing the first set of tables. I have underlined the places where a pause might be suppressed or introduced in the performance.

Scansion

| Phlebas |^ the Phoe| nician, |^ a |fortnight | dead, |^
For|got the | cry of | gulls, |^ and the | deep sea | swell |^
And the | profit and | loss. |^|
A | current under | sea |^|
|Picked his | bones in | whispers. |^ As he | rose and | fell
He |passed the | stages of his | age and |youth | ^|
|Entering the |whirlpool. | ^|
|Gentile or |Jew |
| O |you who | turn the | wheel and |look to | windward, |^
Con|sider | Phlebas, |^ who was | once |handsome and |tall as | you. |

Second set of tables

The next set of tables was made according to a different principle. While the first set of tables gives the foot durations as they appear in sequence, the second set of tables shows the durations of feet grouped according to type. The division into types of foot was made according to the number of syllables per foot -- no further distinguishing factors were taken into account.

The following types were distinguished:

Filled feet (1-,2-,3-,4-syllables in length) appearing between other filled feet. (Heading on tables: 'filled feet'.)

Filled feet (1-, 2-syllables) followed by a metrical pause i.e. silent stress (Heading on tables: unbounded feet).

Here the duration was given of the 'speech' content of the foot followed by a silent stress since it was found in a number of cases that the estimated foot boundary either gave the same results or differed by a few centi-seconds.

Feet initiated by a silent stress, i.e. partially filled feet

(Heading on tables: partially-filled-feet)

Measurement was given of the 'speech' content by itself and together with the duration of the pause. Since no subtraction was made from the length of the pause, these measurements cannot be regarded as truly representing the actual duration of the feet in all cases.

There are certain drawbacks in comparing the different types of feet because the number of their occurrences varies. The least reliable information concerns 1-syllable filled feet since only one occurrence was found of this. The best represented are 2-syllable feet.

Sometimes measurement was not available for a corresponding foot in another recording, and this was indicated by putting a dash in the appropriate places.

Only those feet were chosen for comparison where no difference had been found with regard to scansion. Any renderings susceptible of a different interpretation (including the calculation of the expected foot boundary) have been omitted here.

Weighted means were subsequently calculated for each type of foot, for each recording. These calculations were made to two decimal places without rounding off, on an electronic calculator (Friden).

Finally, a general mean was calculated by adding up all the durations in a given type of foot for all speakers and dividing it by the number of occurrences.

Additional information on variance and standard deviation has also been supplied.

The tables were made for each of the three types of measurement.

Third set of tables

The third set of tables shows an attempt to abstract away from the absolute duration.

Foot types were compared here in terms of their ratios as represented by the mean.

Filled feet (here: those in the neighbourhood of other filled feet) were compared in the followingwways:

1-syll. with 2-syll.,

2-syll. with 3-syll.,

3-syll. with 4-syll. feet as well as the remaining combinations:

1-syll. with 3-syll.,

1-syll. with 4-syll.,

2-syll. with 4-syll.

This was done for each recording and for the general mean.

Here the same caution applies: the information about 1-syllable filled feet is based on a single occurrence in each recording.

Feet before a metrical pause (i.e. silent stress) were next compared with the corresponding filled feet.

Similarly, feet before a pause were compared with "feet" measured from the onset of pause (the ratio might be expected to reveal here whether the pause had been extended into the preceding foot).

"Feet" measured from the onset of the pause were compared with the corresponding filled feet. A comparison was also made inside these "feet" between the "speech" content and the length of pause. This method, too, might be expected to reveal whether the pause was extended into the preceding foot. All three types of measurement (A,B,C) have been given consideration.

Fourth set of tables

The last few tables show a vertical display of foot duration in sequence in one recording (No.I). Alternative measurements were given where the expected foot boundary had been calculated. This was done for feet followed by a silent stress, and also feet where the silent stress was not manifested by silence, i.e. where the preceding sound had been extended over its space.

I now include a list of abbreviations used in the tables.

Legend

Rcd - recording

I - David Abercrombie

II - David Abercrombie recorded one year later

III - T. S. Eliot

IV - David Lloyd-James

V - Alvar Lidell

VI - Robin Holmes

(It is understood that all these recordings are for private research only.)

( ) - optional variant

| - foot boundary

|∧ - silent stress

Foot Measurement (from stressed syllable to the next stressed syllable, but not including it.)

A - including syllable initial consonants

B - excluding " " "

C - including syllable initial voiced consonants, but excluding voiceless segments.

o/e - over-estimated.

Filled Feet - on tables, abbreviated for filled feet between other filled feet.

Unbounded Feet - here, the 'speech' content of a foot followed by a partially filled foot, i.e. a silent stress marks the boundary between the two feet.

Partially-filled Feet - feet whose initial boundary is delimited by a silent stress; here, measured from the onset of a pause.

The last three were further abbreviated in the third set of tables:

.../p - unbounded foot

...p/ - partially filled foot

...(p)/ - partially filled foot ; duration of 'speech' excluded.

The figures accompanying these abbreviations stand for the number of syllables inside the foot.

TABLES: FIRST SET

Feet in sequence

Rcd	SEGMENT DURATION												foot duration measurement		
	f	l	i	b	a	s	|ʌ	ð	ə	f	ə	n	A	B	C
I	0·13	0·05	0·15	0·07	0·23	0·19	0	0·02	0·03	0·10	0·03	0·07	[0·82]	[0·64]	[0·69]
													0·50	0·53	0·43
II	0·06	0·03	0·09	0·04	0·17	0·20	0·04	[0·05]		0·07	0·03	0·06	[0·59]	[0·50]	[0·53]
													0·39	0·37	0·36
III	0·05	0·03	0·13	0·08	0·08 (ə) / 0·03 (ɪ)	0·18	0·06	[0·06]		0·09	0·06 (ɪ)	0·08	[0·58]	[0·50]	[0·61]
													0·42	0·42	0·40
IV	0·09	0·06	0·11	0·06	0·19	0·28	0·13	0·09	0·05	0·12	0·05	0·09	[0·78]	[0·63]	[0·69]
													0·61	0·58	0·56
V	0·12	0·06	0·12	0·05	0·18	0·15	0·05	[0·07]		0·09	0·06	0·05	[0·68]	[0·50]	[0·56]
													0·47	0 41	0·41
VI	0·05	0·03	0·09	0·05	0·16	0·12	0·05	0·02	0·04	0·08	0·04	0·07	[0 50]	[0·42]	[0·45]
													0 36	0·39	0·37

Foot : | Phlebas |ʌ(the Phoe|nician)

Rcd	SEGMENT DURATION												foot duration measurement		
	|ʌ	ð	ə	f	ə	n							A	B	C
I	0	0·02	0·03	0·10	0·03	0·07							0·18	0·25	0·18
II	0·04	0·05		0·07	0·03	0·06							[0·15] 0·19	[0·21] 0 25	[0·15] 0 19
III	0·06	0·06		0·09	0·06	0·08							[0·21] 0·27	[0·29] 0·35	[0·21] 0·27
IV	0·13	0·09	0·05	0·12	0·05	0·09							[0·31] 0·44	[0·40] 0·53	[0·31] 0·44
V	0·05	0·07		0·09	0·06	0·05							[0·22] 0·27	[0·27] 0·32	[0·22] 0·27
VI	0·05	0·02	0·04	0·08	0·04	0·07							[0·18] 0·23	[0·25] 0·30	[0·18] 0·23

Foot : |ʌ the Phoe(nician)

Rcd	SEGMENT DURATION												foot duration measurement		
	n	i	ʃ	(ə)	n	$l_{\wedge}$	ə	f					A	B	C
I	0·07	0·12	0·19	0	0·40	0·12	0·05	0·14					[0·78] 0·47	[0·71] 0·51	[0·78] 0·54
II	0·06	0·11	0·13	0	0·21	0·17	0·04	0·12					[0·51] 0·36	[0·45] 0·39	[0·51] 0·42
III	0·08	0·06	0·20	0·08	0·13	0·51	0·09	0·14					[0·55] 0·57	[0·47] 0·60	[0·55] 0·64
IV	0·09	0·10	0·14	0	0·20	0·64	0·07	0·18					0·53 0·62	0·44 0·66	0·53 0·71
V	0·05	0·10	0·14	0	0·32	0·39	0·09	0·19					[0·61] 0·54	[0·56] 0·61	[0·61] 0·64
VI	0·07	0·06	0·12	0	0·17	0·32	0·06	0·16					[0·42] 0·40	[0·35] 0·52	[0·42] 0·56

Foot : (Phoe)|nician (ʌa|fortnight)

Rcd	SEGMENT DURATION												foot duration measurement		
	lʌ	ə	f										A	B	C
I	0·12	0·05	0·14										[0·05] 0·17	[0·19] 0·31	[0·19] 0·31
II	0·17	0·04	0·12										[0·04] 0·21	[0·16] 0·33	[0·16] 0·33
III	0·51	0·09	0·14										[0·09] 0·60	[0·23] 0·64	[0·23] 0·64
IV	0·64	0·07	0·18										[0·07] 0·71	[0·25] 0·89	[0·25] 0·89
V	0·39	0·09	0·19										[0·09] 0·48	[0·28] 0·67	[0·28] 0·67
VI	0·32	0·06	0·16										[0·06] 0·38	[0·22] 0·54	[0·22] 0·54

Foot : | ʌ a | (fortnight)

Rcd	SEGMENT DURATION												foot duration measurement		
	f	ɔ	t	n	aɪ	t	(h)	d					A	B	C
I	0·14	0·16	0·12	0·03	0·19	0·19	0	0·04					0·83	0·73	0·69
II	0·12	0·11	0·12	0·03	0·13		0 0·20						0·71	—	—
III	0·14	0·15	0·18	0·04	0·16		0 0·22						0·89	—	—
IV	0·18	0·10	0·14	0·07 0·04 + 0·03	0·15	0·09	0	0·14					0·73	0·69	0·55
V	0·19	0·12	0·16	0·06 0·01 + 0·05	0·16	0·07	0·06	0·15 0·05 + 0·10					0·82	0·78	0·63
VI	0·16	0·11	0·10	0·04 0·01 + 0·03	0·13	0·08	0	0·10					0·62	0·56	0·46

Foot : | fortnight | (dead)

Rcd	SEGMENT DURATION												foot duration measurement		
	d	ɛ	d	ʌ	f	ə	g						A	B	C
I	0·04	0·28	0·14	0·31	0·11	0·04	0·09						[0·46] 0·46	[0·42] 0·50	[0·46] 0·46
II	⌐	0·24	0·10	0·74	0·03	0·04	0·06						[0·34] 0·58	[0·34] 0·60	—
III	⌐	0·22	0·23	0·44	0·02	0·06	0·11						[0·97] 0·48	[0·45] 0·54	—
IV	0·14	0·17	0·12	1·30	0·13	0·05	0·11						[0·43] 0·95	[0·29] 0·94	[0·43] 0·95
V	0·15 0·05 + 0·10	0·19	0·16	1·04	0·05	0·05	0·10						[0·50] 0·82	[0·35] 0·79	[0·50] 0·82
VI	0·10	0·17	0·07	0·84	0·02	0·05	0·07						[0·34] 0·62	[0·24] 0·61	[0·34] 0·62

Foot : | dead | (ʌ for got)

Rcd	SEGMENT DURATION												foot duration measurement		
	lʌ	f	ə	g									A	B	C
I	0·31	0·11	0·04	0·09									[0·15] 0·46	[0·24] 0·55	[0·15] 0·46
II	0·74	0·03	0·04	0·06									[0·07] 0·81	[0·13] 0·87	[0·07] 0·81
III	0·44	0·02	0·06	0·11									[0·08] 0·52	[0·29] 0·73	[0·08] 0·52
IV	1·30	0·13	0·05	0·11									[0·18] 1·48	[0·29] 1·59	[0·18] 1·48
V	1·04	0·05	0·05	0·10									[0·10] 1·14	[0·20] 1·24	[0·10] 1·14
VI	0·84	0·02	0·05	0·07									[0·07] 0·91	[0·14] 0·98	[0·07] 0·91

Foot : |ʌ for| got

Rcd	SEGMENT DURATION												foot duration measurement		
	g	ɒ	t	h		ð	ə	k	r				A	B	C
I	0·09	0·14	0·09	0·10	0		0·04	0·06	0·06				0·46	0·49	0·52
II	0·06	0·12	0·12	0	0	0·02	0·04	0·03	0·05				0·36	0·38	0·39
III	0·11	0·15	0·21	0	0	0·02	0·03	0·09					0·52	0·50	0·61
IV	0·11	0·16	0·15	0·14	0·10		0·04	0·12	0·08				0·70	0·79	0·82
V	0·10	0·12	0·08	0·05	0	0·07	0·06	0·12	0·08				0·48	0·58	0·60
VI	0·07	0·15	0·22	0	0		0·05	0·12	0·08				0·49	0·62	0·54

Foot : (for) | got the | (cry)

Rcd	SEGMENT DURATION												foot duration measurement		
	k	r	aɪ	ə	v	g							A	B	C
I	0·06	0·06	0·27	0·02	0·03	0·05							0·44	0·37	0·35
II	0·03	0·05	0·22		0·04	0·08							0·34	0·34	0·39
III	0·09		0·53		0·16								—	—	—
IV	0·12	0·08	0·32		0·07	0·09							0·59	0·48	0·47
V	0·11	0·07	0·28	0·18	0·09	0·07							0·73	0·62	0·62
VI	0·12	0·08	0·24		0·05	0·10							0·49	0·39	0·37

Foot | cry of | (gulls)

Rcd	SEGMENT DURATION												foot duration measurement		
	g	ʌ	l	z	lʌ	ə	n	ð	ə	d			A	B	C
I	0·05	0·20	0·22	0·20	0	0·04	0·08		0·05	0·09			[0·67] 0·42	[0·62] 0·44	[0·67] 0·42
II	0·08	0·28	0·14	0·22	0·01	0·07	+d 0·08	0·01	0·03	0·06			[0·72] 0·46	[0 64] 0·45	[0·72] 0·46
III	(v) 0·16	0·25	0·31	0·08	0	ə 0·08	+d 0·09	0·02	0·05	0·09			—	[0·64] 0·48	—
IV	0·09	0·18	0·41	0·11	0·56	ə 0·06	0·08	0·0	0·03	0·12			[0·79] 0·76	[0·70] 0·78	[0·79] 0·76
V	0·07	0·11	0·31	0·19	0·42	ə 0·10	0·07	+d 0·04	0·04	0·12			[0·68] 0·67	[0·61] 0·70	[0·68] 0·67
VI	0·10	0·17	0·24	0·09	0	0·02	0·06	d 0·02	0·05	0·09			[0·60] 0·37	[0·50] 0·37	[0·60] 0·37

Foot : | gulls, | ʌand the | (deep)

Rcd	SEGMENT DURATION												foot duration measurement		
	lʌ	ə	n	ð	ə	d							A	B	C
I	0	0·04	0·08		0·05	0·09							[0·17] 0·17	[0·26] 0 26	[0·17] 0 17
II	0·01	0·07	0·08	0·01	0·03	0·06							[0·19] 0·20	[0·25] 0·26	[0·19] 0·20
III	0	0·08	0·09	0·02	0·05	0·09							[0·24] 0·24	[0·33] 0·33	[0·24] 0·24
IV	0·56	0·06	0·09	0·01	0·03	0·12							[0·19] 0·75	[0·31] 0·87	[0·19] 0·75
V	0·42	0·10	0·07	0·04	0·04	0·12							[0·25] 0·67	[0·37] 0·79	[0·25] 0·67
VI	0	0·02	0·06	0·04	0·03	0·09							[0·15] 0·15	[0·24] 0·24	[0·15] 0·15

Foot : |ʌ and the | (deep)

Rcd	SEGMENT DURATION												foot duration measurement		
	d	i	p	s	i	s	w						A	B	C
I	0·09	0·12	0·06	0·14	0·15	0·17	0·03 + 0·06						0·56	0·7	0·73
II	0·06	0·09	0·08	0·12	0·10	0·15	0·03 + ⌊						0·45	0·57	0·63
III	0·09	0·10	0·13	0·16	0·20	0·17	0·03 + ⌊						0·68	—	0·88
IV	0·12	0·14	0·22	0·23	0·27	0·19	0·06 + ⌊						0·98	—	—
V	0·12	0·12	0·10	0·17	0·19	0·18	⌊						0·70	—	0·88
VI	0·09	0·09	0·07	0·12	0·16	0·13	⌊						0·53	—	0·70

Foot : | deep sea | (swell)

Rcd	SEGMENT DURATION												foot duration measurement		
	s	w	ɛ	l	lʌ	ə	n	d	ð	ə	p	r	A	B	C
I	0·14	0·03 + 0 0 6	0·09	0·34	0·12	0·06		0 0·08		0·05	0·09	0·04	0·66 / 0·49	0·43 / 0·43	0·49 / 0·46
II	0·15	0·03	0·27	0·14	0·25	0·02	0·0	8	0·02	0·03	0·06	0·02	0·59 / 0·49	—	0·41 / 0·44
III	0·17	0·03	0·31	0·23	0	0·10	0·	11	0·0	4	0·12	0·03	0·74 / 0·49	—	0·54 / 0·47
IV	0·19	0·06	0·24	0·13	1·15	0·04	0·	08	0·0	4	0·08	0·06	0·62 / 0·86	—	0·37 / 0·84
V	0·18	0·	18	0·25	0·96	0·11	0·1	2	0·0	5	0·10	0·07	0·61 / 0·92	—	0·43 / 0·83
VI	0·13	0·04	0·24	0·09	0·76	0·11		0·18			0·10	0·03	0·50 / 0·77	—	0·33 / 0·69

Foot : | swell | (ʌand the profit)

Rcd	SEGMENT DURATION												foot duration measurement		
	lʌ	ə	n	ð	ə	p	r						A	B	C
I	0·12	0·06		0·08		0·05	0·09	0·04					[0·19] 0·31	[0·32] 0·44	[0·32] 0·44
II	0·25	0·02	0·08	0·02		0·03	0·06	0·02					[0·15] 0·40	[0·23] 0·48	[0·23] 0·48
III	0	ə 0·10	0·11		0·04		0·12	0·03					[0·25] 0·25	[0·40] 0·40	[0·40] 0·40
IV	1·15	0·04	0·08		0·04		0·08	0·06					[0·16] 1·31	[0·30] 1·41	[0·30] 1·45
V	0·96	ə 0·11	0·08	0·04		0·05	0·10	0·07					[0·28] 1·24	[0·45] 1·41	[0·45] 1·41
VI	0·76	ə 0·11		0·18			0·10	0·03					[0·29] 1·05	[0·42] 1·18	[0·42] 1·18

Foot : |ʌ and the | (profit)

Rcd	SEGMENT DURATION														foot duration measurement		
	p	r	ɒ	f	h	ɪ	t	h	(ʌ)	ə	n	d	l		A	B	C
I	0·09	0·04	0·13	0·10	0	0·06	0·06	0·06		0·10		0·03	0·09		0·67	0·63	0·54
II	0·06	0·02	0·10	0·07	0	0·06	0·05	0·02		0·03	0·08	0·01	0·05		0·50	0·47	0·42
III	0·12	0·03	0·10	0·12	0	0·06	0·10	0·01		0·07	0·10	0·04	0·07		0·75	0·67	0·60
IV	0·08	0·06	0·09	0·08	0	0·08	0·08	0·03	0·69	ə 0·05		0·12	0·07		0·47 0·68	0·33 0·64	0·33 0·64
V	0·10	0·07	0·08	0·08	0·03	0·04	0·05	0·05		0·05	0·09	0·05	0·09		0·69	0·61	0·52
VI	0·10	0·03	0·08	0·07	0	0·08	0·03	0·04		0·03	0·07	0·03	0·07		0·56	0·55	0·43

Foot : | profit and | (loss)

Rcd	SEGMENT DURATION												foot duration measurement		
	l	ɒ	s	l∧l									A	B	C
I	0·08	0·12 + 0·10	0·11	0·98									0·41	0·33	0·41
II	0·05	0·18	0·30	0·55									0·53	0·48	0·53
III	0·07	0·17 + 0·06	0·26	1·18									0·56	0·49	0·56
IV	0·07	0·07 + 0 10	0·25	—									0·49	0·42	0·49
V	0·09	0·15	0·26	1·64									0·50	0·41	0·50
VI	0·07	0·13 + 0·04	0·18	1·07									0·42	0·35	0·42

Foot : | loss | ∧ |

Rcd	SEGMENT DURATION															foot duration measurement		
	(ə)	k	h	ʌ	r	ə	n	t	h		ʌ	n	d	ə	s	A	B	C
I	0·04	0·07	0·05	0·09	0·03	0·09	0·03	0·05	0·03		0·09	0·06	0·02	0·05	0·18	0·66	0·72	0·72
II	0·05	0·05	0·03	0·08	0·02	0·08	0·06	0·03	0·02		0·07	0·05	0·01	0·05	0·14	0·55	0·61	0·61
III	0·08	0·12	0·04	0·08	0·04	0·08	0·10		0·02		0·11	0·08	0·05	0·10	0·16	0·82	0·82	0·82
IV	0·05	0·14	0·06	0·08	0·03	0·09	0·11	0·05	0·05	0·10	0·09	0·12		0·08	0·22	1·00 / (0·50)	—	—
V	0·06	0·11	0·04	0·10	0·05	0·05	0·11	0·12	0·05	0·13	0·10	0·08	0·05	0·08	0·16	1·07 / (0·53)	—	—
VI	0·05	0·13	0·04	0·08	0·02	0·07	0·08	0·02	0·01		0·09	0·04	0·03	0·05	0·14	0·68	0·65	0·65

Foot : (A) | current under | (sea)

Rcd	SEGMENT DURATION												foot duration measurement		
	s	i	|ʌ|	p	h								A	B	C
I	0·18	0·24	0	0·11	0·04								0·42	0·39	0·39
II	0·14	0·24	0	0·09	0·01								0·38	0·34	0·34
III	0·16	0·27	0	0·16	0								0·43	0·43	0·43
IV	0·22	0·31	0	0·25	0·02								0·53	0·58	0·58
V	0·16	0·33	0	0·14	0·05								0·49	0·52	0·52
VI	0·14	0·32	0	0·28	0·02								0·46	0·62	0·62

Foot : | sea | ʌ | (picked)

Rcd	SEGMENT DURATION												foot duration measurement		
	p	h	ɪ	k	h	t	h	h	ɪ	z	b		A	B	C
I	0·11	0·04	0·04	0·08	0	0·10	0·05	0·07	0·09	0·05	0·10		0·63	0·58	0·48
II	0·09	0·01	0·06	0·06	0	0·06	0·05	0	0·06	0·05	0·07		0·44	0·41	0·34
III	0·16	0	0·07	0·25	0		0·03	0	0·11	0·05	0·10		0·67	0·61	0·51
IV	0·25	0·02	0·03	0·16	0·06	0·09	0	0·11	0·05	0·10	0·13		0·87	0·73	0·60
V	0·14	0·05	0·05	0·11	0	0·10	0	0·08	0·16	0·11	0·11		0·80	0·72	0·61
VI	0·28	0·02	0·04	0·09	0	0·07	0·03	0	0·08	0·04	0·09		0·65	0·44	0·35

Foot : | Picked his | (bones)

Rcd	SEGMENT DURATION												foot duration measurement		
	b	oo	n	z	ɪ	n	h	w					A	B	C
I	0·10	0·20	0·10	0·07	0·06	0·06	0·07	0·04					0·59	0·60	0·66
II	0·07	0·16	0·10	0·07	0·03	0·10	0		0·07 ɪ				0·53	—	0·53
III	0·10	0·24	0·15	0·08	0·08	0·08	0	0·11					0·73	0·84	0·73
IV	0·13	0·20	0·26	0·06	0·06		0 0·25 ɪ						0·71	—	—
V	0·11	0·28	0·24	0·16	0·08	0·08	0		0·23 ɪ				0·95	—	
VI	0·09	0·20	0·18	0·09	0·06	0·08	0		0·13 ɪ				0·70	—	

Foot : | bones in | (whispers)

Rcd	SEGMENT DURATION														foot duration measurement		
	h	w	ɹ	s	p	h	ə	z	lʌ	ə	z	h	ɹ	r	A	B	C
I	0·07	0·04	0·04	0·08	0·10	0·02	0·20	0·18	0·46	0·06	0·11	0	0·17	0·04	[0·73] 0·71	[0·62] 0·82	[0·66] 0·82
II	0		0·07	0·08	0·09	0	0·16	0·14	1·42	0·04	0·04	0·05	0·14		[0·54]	—	[0·54]
III	0	0·11	0·07	0·07	0·09	0	0·20 0·16 +0·04	0·13	0·84	ə 0·11	0·10	0·12			[0·67]	[0·56]	[0·67]
IV	0		0·25	0·13	0·09	0	0·19 0·09 +0·10	0·19	1·13	ə 0·08	0·06	0·08			[0·85]	—	[0·85]
V	0		0·23	0·16	0·09	0	0·20	0·13	1·12	ə 0·10	0·09	0·07			[0·81]	—	[0·81]
VI	0		0·13	0·14	0·09	0	0·14 0·10 +0·04	0·13	1·45	ə 0·09	0·05	0·03			[0·63]	—	[0·63]

Foot : | whispers. | (ʌ As he | rose)

Rcd	SEGMENT DURATION												foot duration measurement		
	f	ɛ	l	(lʌ)	h	t	p	h					A	B	C
I	0·13	0·17	0·17	0	0·06	0·08	0·08	0·03					0·61	0·59	0·59
II	0·09 0·08 + 0·01	0·18	0·16	0·53	—	0·05	0·07	0·02					[0·43] 0·50	[0 34] 0·50	[0·34] 0·50
III	0·15	0·24	0·18	0	0·09	0·09	0·15	0					0·75	0 75	0·75
IV	0·21	0·24	0·14	0·75	[0·11]		0·14	0·05					[0·59]	[0·38]	[0·38]
V	0·18	0·27	0·20	0·98	0·04	0·08	0·11	0·03					[0·65]	[0·47]	[0·47]
VI	0·16	0·19	0·09	0·46	—	0·06	0·11	0·02					[0·44]	[0·28]	[0·28]

Foot : | fell he | (passed)

Rcd	SEGMENT DURATION												foot duration measurement		
	r	oo	z	(ʌ)	ə	n	d	f					A	B	C
I	0·04	0·25	0·07	0	0·04	0·09	0	0·13					0·49	0·58	0·62
II	0·14	0·24	0·07	0	0·03	0·06	0	0·09 0·08 + 0·01					—	0·49	—
III	0·63		0·11	0	0·10	0·07	0·06	0·15					—	—	—
IV	0·75		0·18	0·22	0·10	0·09	0·04	0·21					—	—	—
V	0·61		0·06	0	0·06	0·08	0	0·18					—	—	—
VI	0·40		0·04	0	0·03	0·09	0	0·16					—	—	—

Foot : | rose and | (fell)

Rcd	SEGMENT DURATION												foot duration measurement		
	lʌl	ə	z	h	ɹ	r							A	B	C
I	0·46	0·06	0·11	0	0·17	0·04							[0·34] 0·70	[0·38] 0·74	[0·34] 0·70
II	1·42	0·04	0·04	0·05	0·14								—	—	—
III	0·84	a 0·11	0·10	0·12									—	—	—
IV	1·13	a 0·08	0·06	0·08									—	—	—
V	1·12	a 0·10	0·09	0·07									—	—	—
VI	1·45	a 0·09	0·05	0·03									—	—	—

Foot : | ʌ as he | (rose)

Rcd	SEGMENT DURATION												foot duration measurement		
		eɪ	d	ʒ		ə	n	d					A	B	C
I		0·19	0·05	0·07	0	0·07	0·08	0					0·47	—	0·47
II		0·21	0·05	0·03	0	0·05	0·10	0					0·44	—	0·44
III		0·36	0·06	0·09	0	0·08	0·09	0·07					0·75	—	0·75
IV	0·12	0·24	0·11	0·11	0	0·04	0·10	0·03					[0·63] 0·75	—	[0·63] 0·75
V		0·20	0·09	0·02	0	0·08	0·10	0·03					0·52	—	0·52
VI		0·40	0·09	0·19	0·11	0·08							[0·68] 0·48	—	[0·68] 0·48

Foot : | age and | (youth)

Rcd	SEGMENT DURATION												foot duration measurement		
	p	h	ɑ	s	t	ð	ə	s	t	h			A	B	C
I	0·08	0·03	0·17	0·16		0·01	0·04	0·06	0·05	0·03			0·49	0·52	0·52
II	0·07	0·02	0·18	0·10	0·07	0·01	0·04	0·08	0·02	0·02			0·49	0·52	0·52
III	0·15	0	0·17 + 0·04	0·15	0·10	0·02	0·02	0·10	0·05	0·02			0·65	0·67	0·67
IV	0·14	0·05	0·18	0·18	0·12	0·03	0·05	0·14	0·05	0·02			0·75	0·77	0·77
V	0·11	0·03	0·24	0·13	0·09	0·02	0·04	0·13	0·05	0·02			0·66	0·72	0·72
VI	0·11	0·02	0·19	0·09	0·07	0·01	0·04	0·11	0·06	0·02			0·52	0·58	0·58

Foot : | passed the | (stages)

Rcd	SEGMENT DURATION														foot duration measurement		
	s	t	h	eɪ	dʒ		ɪ	z	ə	v	h	ɪ	z		A	B	C
I	0·06	0·05	0·03	0·15	0·04	0·05	0·06	0·10	0·03	0·03	0·05	0·06	0·08	0	0·79	0·65	0·65
II	0·08	0·02	0·02	0·13	0·04	0·05	0·07	0·09	0·03	0·05		0·06	0·05	0	0·69	0·57	0·57
III	0·10	0·05	0·02	0·20	0·04	0·06	0·18	0·07	0·10	0·08		0·10	0·05	0	1·05	0·88	0·88
IV	0·14	0·05	0·02	0·13	0·06	0·03	0·13	0·10	0·05	0·05	0·04	0·10	0·08	0 12	[0·98]	[0·77]	[0·77]
V	0·13	0·05	0·02	0·16	0·06	0·03	0·20	0·07	0·14	0·02	0·04	0·10	0·06	0	1·08	0·88	0·88
VI	0·11	0·06	0·02	0·14	0·05	0·03	0·07	0·06	0·03	0·04	—	0·09	0·04	0	0·74	0·53	0·53

Foot : | stages of his | (age)

Rcd	SEGMENT DURATION												foot duration measurement		
	J	u	θ	|ʌ|								A	B	C
I	0·04	0·19	0·07	0·47									0·30	—	0·30
II	0·19		0·17	0·16									0·36	—	0·36
III	0·27	+0·05	0·19	0·18									0·51	—	0·51
IV	0·23	+0·05	0·14	1·79									0·42	—	0·42
V	0·41		0·16	0·59									0·57	—	0·57
VI	0·22		0·20	0·62									0·42	—	0·42

Foot : | youth | ʌ |

Rcd	SEGMENT DURATION												foot duration measurement		
	ɛ	n	t	h	ə	r	ɪ	ŋ	ð	ə	h	w	A	B	C
I	0·10	0·04	0·04	0·09	0·07	0·03	0 05	0·12	0·04	0·09	0·06	0·09	0·67	0·82	0·73
II	0·08	0·05	0·04	0·03		0·16		0·08	0·03	0·04	0		0·51	—	0·51
III	0·11	0·04	0·12	0·03		0·21		0·14		0·08	0·04		0·73	—	0·77
IV	0·06	0·06	0·06	0·07	0·05	0·11		0·19	0·03		0		0·63	—	—
V	0·06	0·07	0·04	0·05		0·20		0·16	0·02	0·06		0·11	0·66	0·77	0·66
VI	0·06	0·06	0·03	0·04	0·02	0·12		0·20	0·06	0·06			0·65	—	0·65

Foot : |Entering the|(whirpool)

Rcd	SEGMENT DURATION												foot duration measurement		
	h	w	ɜ	l	p	h	u	l	l∧l				A	B	C
I	0·06	0·06	0·19	0·05	0·10	0·06	0·09	0·08	0·60				0·69	0·57	0·63
II	0	0·21		0·07	0·08	0·04	0·22	0·10	0·90				0·72	—	0·72
III	0·04	0·21		0·13	0 14	0·03	0·20	0·17	0·92				0·92	—	0·88
IV	ə 0	0·31		0·11	0·10	0·07	0·38		—				0·97 %e	—	—
V	0	0·11	0·10	0·12	0·09	0·06	0·34		—				0·82	0·71	0·82
VI	0	0·13		0·11	0·08	0·05	0·38		1·75				0·75	—	0·75

Foot : whirpool ∧

Rcd	SEGMENT DURATION												foot duration measurement		
	d	ʒ	ɛ	n	t	h	aɪ	l		ɔ	d	ʒ	A	B	C
I	0·07	0·07	0·09	0·08	0·06	0·06	0·27	0·07	0	0·16	0·07	0·05	0·93	0·97	0·93
II	0·10	0·05	0·09	0·05	0·06	0·04	0·17	0·05	0	0·14	0·08	0·04	0·75	0·72	0·75
III	—	0·09	0·11	0·08	0·06	0·02	0·33	0·10	0	0·19	0·08	0·09	0·98	1·06	0·98
IV	0·10	0·08	0·07	0·07	0·06	0·07	0·31	0·22	0·08	0·20	0·12	0·12	[0·98]	[0·80]	[0·98]
V	—	0·10	0·06	0·15	0·06	0·03	0·29	0·21	0·04	0·19	0·08	0·10	[0·90]	[0·80]	[0·90]
VI	—	0·05	0·09	0·06	0·06	0·04	0·21	0·04	0	0·12	0·13	0·11	0·67	0·85	0·62

Foot : | Gentile or | (Jew)

Rcd	SEGMENT DURATION												foot duration measurement		
	d	ʒ	u	(lʌl)	ɔɷ								A	B	C
I	0·	18	0·40	0·47	0·32								0·58	0·40	—
II	0·	12	0·45	0·11	0·32								0·57	0·45	—
III	0·	17	0·35	0·72	0·20								0·52	0·35	—
IV	0·	24	0·50	—	└								0·74	0·50	—
V	0·	18	0·40	0·54	0·24								0·58	0·40	—
VI	0·	24	0·32	0·52	0·14								0·56	0·32	—

Foot : | Jew | (O) |

Rcd	SEGMENT DURATION												foot duration measurement		
	(I∧)	∞											A	B	C
I	0·47	0·32											0·32		0·32
II	0·11	0·32											0·32		0·32
III	0·72	0·20											[0·20] 0·92		[0·20] 0·92
IV	?	└—													
V	0·54	0·24											[0·24] 0·78		0·24 0·78
VI	0·52	0·14											[0·14] 0·66		[0·14] 0·66

Foot : | whirpool | ∧ |

Rcd	SEGMENT DURATION												foot duration measurement		
	j	u	h	ɑ	t	h							A	B	C
I	0·24		0·07	0·08	0·06	0·06							0·39	0·51	0·51
II	0·29		0·04	0·08	0·05	0·03							0·41	0·49	0·49
III	0·20		0·07	0·10	0·10	0·02							0·37	0·49	0·49
IV	0·51		0·10	0·10	0·12	0·07							—	—	—
V	0·43		0·07	0·10	0·09	0·05							0·60	0·74	0·74
VI	0·31		0·07	0·08	0·08	0·04							0·46	0·58	0·58

Foot : | you who | (turn)

Rcd	SEGMENT DURATION												foot duration measurement		
	t	h	ɜ	n	ð	ə	h	w					A	B	C
I	0·06	0·06	0·15	0·08	0·01	0·05	0·07	0·11					0·41	0·47	0·36
II	0·05	0·03	0·12	0·06	0·03	0·02	—	0·12					0·31	0·35	0·23
III	0·10	0·02	0·23	0·13	⌊ 0·	06 ⌋	0·08	⌊					0·54	—	0·50
IV	0·12	0·07	0·21	0·18	⌊	0·19	—	⌋					—	0·58	—
V	0·09	0·05	0·27	0·18	0·03	0·06	—	0·11					0·68	0·65	0·54
VI	0·08	0·04	0·13	0·13	⌊ 0·	07 ⌋	—	0·12					0·45	0·45	0·33

Foot : | turn the | (wheel)

Rcd	SEGMENT DURATION												foot duration measurement		
	h	w	ɪ	l	(lʌ)	ə	n	d	l				A	B	C
I	0·07	0·11	0·12	0·06	0	0·05	0·03		0·07				0·44	0·33	0·37
II	—	0·12	0·18	0·11	0	0·05	0·06	0·03	0·05				0·55	0·48	0·55
III	—	0·42		0·06	0	0·08	0·08	0·06	0·07				0·70	—	—
IV	—	0·19	0·19	0·26	0·38	0·07	0·12		0·08				—	—	—
V	—	0·11	0·15	0·23	0·18	0·08	0·06	0·02	0·10				[0·49] 0·41	[0·39]	[0·49]
VI	—	0·12	0·12	0·08	0	0·06	0·06	—	0·05				0·44	0·37	0·44

Foot : | wheel and | (look)

Rcd	SEGMENT DURATION												foot duration measurement		
	l	ɑ	k	h	t	h	ə	w					A	B	C
I	0·07	0·05		0 0·16		0·06	0·06						0·42	—	0·42
II	0·05	0·06	0·08	0	0·08		0·06	0·11					0·33	0·39	0·33
III	0·07	0·08	0·15	0	0·11	0·02	0·06						0·49	—	0·49
IV	0·08	0·04	0·12	0·06	0·09	0·04							—	—	—
V	0·10	0·07	0·08	0·03	0·10	0·03	0·14						0·55	—	0·55
VI	0·05	0·06	0·07	0	0·05	0·03	0·06						0·32	—	0·32

Foot : | look to | (windward)

Rcd	SEGMENT DURATATION												foot duration measurement		
	w	ɪ	n	d	w	ə	d						A	B	C
I	0·10		0·05	0·09	0·08	0·12	0·16						0·60	—	0·60
II	0·11	0·02	0·10	0·02	0·11		0·14						0·50	0·39	0·50
III	0·16		0·13	0·04	0·24		0·12						0·69	—	0·69
IV	ə 0·18		0·21		0·19		0·08						0·66	—	—
V	0·11		0 07	0·12	0·10	0·07	0·20						0·67	—	0·67
VI	0·12		0·09	0·03	0·19		0·06						0·49	—	0·49

Foot : | windward | ^

Rcd	SEGMENT DURATION												foot duration measurement		
	lʌ	k	h	ə	n	s							A	B	C
I	0·60	—	0·04	0·04	0·06	0·16							[0·14] 0·74	[0·30] 0·90	[0·30] 0·90
II	0·76	—	0·03	0·03	0·04	0·10							[0·10] 0·86	[0·20] 0·96	[0·20] 0·96
III	0·73	—	0·03	0·06	0·07	0·14							[0·16] 0·89	[0·30] 1·03	[0·30] 1·03
IV	1·77	—	0·04	[0·11 + 0·02]		0·15							[0·17] 1·94	[0·32] 2·09	[0·32] 2·09
V	1·06	—	0·03	0·06	0·10	0·15							[0·19] 1·25	[0·34] 1·40	[0·34] 1·40
VI	0·63	—	0·04	0·02	0·10	0·15							[0·16] 0·79	[0·31] 0·94	[0·31] 0·94

Foot : |ʌ con|(sider)

Rcd	SEGMENT DURATION											foot duration measurement		
	s	ɪ	d	ə	f							A	B	C
I	0·16	0·08	0·06	0·16	0·17							0·46	0·47	0·47
II	0·10	0·05	0·04	0·11	0·12							0·30	0·32	0·32
III	0·14	0·06	0·07	0·12	0·14							0·39	0·39	0·39
IV	0·15	0·04	0·04	0·14	0·10							0·37	0·32	0·32
V	0·15	0·07	0·04	0·25	0·24							0·51	0·60	0·60
VI	0·15	0·05	0·06	0·13	0·16							0·39	0·40	0·40

Foot : (con)|sider|(Phlebas)

Rcd	SEGMENT DURATION												foot duration measurement		
	f	l	l	b	a	s	lʌ	h	ɑ	w	ə	z	A	B	C
I	0·17	0·05	0·09	0·08	0·28	0·27	0·34	0·02	0·04	0·09	0·04	0·21	[0·94]	[0·72]	[0·77]
													0·84	0·78	0·75
II	0·12	0·05	0·11	0·07	0·21	0·29	0·15	—	[0·13]		0·04	0·05	[0·85]	[0·68]	[0·73]
													0·61	—	0·55
III	0·14	0·04	0·09	0·09	ə 0·11 + 0·09 0·02	0·23	0·56	0·03	[0·28		]	0·09	[0·70]	[0·52]	[0·56]
													0·83	—	0·76
IV	0·10	0·06	0·09	0·08	0·20 + 0·15 0·05	0·29	1·12	0·05	[0·14]		0·04	0·08	[0·82]	[0·66]	[0·72]
													1·12	—	1·07
V	0·24	0·06	0·11	0·08	0·30 + 0·20 0·10	0·27	0·71	0·05	[0·20]		0·06	0·07	[0·66 ~~0·86~~]	[0·76]	[0·82]
													1·07	—	0·95
VI	0·16	0·04	0·06	0·08	0·18	0·15	0·82	—	0·08	[0·13]		0·07	[0·67]	[0·47]	[0·51]
													0·88	—	0·80

Foot : | Phlebas | (ʌwho was)

	SEGMENT DURATION												foot duration measurement		
	lʌ	h	ɑ	w	ə	z	w						A	B	C
Rcd i	0·34	0·02	0·04	0·09	0·04	0·21	0·11						[0·40] 0·74	[0·51] 0·85	[0·40] 0·74
ii	0·15	0	[0·13]		0·04	0·05							[0·22] 0·37	—	[0·22] 0·37
iii	0·56	0·03	[0·28]			0·09							[0·40] 0·96	—	[0·40] 0·96
iv	1·12	0·05	[0·14]		0·04	0·08							[0·31] 1·43	—	[0·31] 1·43
v	0·71	0·05	[0·20]		0·06	0·07	0·11						[1·38] 1·09	0·49 1·20	[0·38] 1·09
vi	0·82	0	0·08	[0·13]		0·07							[0·28] 1·10	—	[0·28] 1·10

Foot : | who was | (once)

Rcd	SEGMENT DURATION												foot duration measurement		
	w	ʌ	n	s		h							A	B	C
I	0·04	0·09	0·09	0·18	0	0·10							0·40	0·46	0·50
II	0·15		0·07	0·08	0	0·05							0·30	—	0·35
III	0·05	0·17	0·13 (0·08 + 0·05)	0·25	0	0·19							0·60	—	0·79
IV	0·02	0·14	0·07	0·12	0	0·12							0·35	—	0·47
V	0·11	0·08	0·11	0·29	0·20	0·06							0·59	0·74	0·85
VI	0·04	0·13	0·10	0·18	0	0·18							0·45	—	0·59

Foot : | once | (handsome)

Rcd	SEGMENT DURATION												foot duration measurement		
	h	a	n	s	ə	m	(ʌ)	ə	n	t	h		A	B	C
I	0·10	0·09	0·10	0·14	0·09	0·19	0	0·05	0·09	0·08	0·10		0·85	0·93	0·93
II	0·05	0·09	0·09 (0·05 + 0·04)	0·11	0·06	0·09	0	0·04	0·06	0·08	0·06		0·59	0·68	0·68
III	0·19	0·11	0·12 (0·07 + 0·05)	0·14	0·08	0·18	0	0·11	0·04	0·19	0·03		0·97	1·00	1·00
IV	0·12	0·05	0·11	0·15	0·03	0·16	1·52	0·04	0·09	0·14	0·09		(0·62) (1·13)	[0·50] (1·19)	[0·50] (1·19)
V	0·20 + 0·60	0·10	0·12 (0·10 + 0·02)	0·14	0·05	0·20	0·18	0·12	0·12	0·16	0·05		[0·67] + 0·20? 0·64	[0·61] 0·62	[0·61] 0·62
VI	0·18	0·09	0·08	0·15	0·05	0·14	0·42	0·05	0·05	0·17	0·07		[0·69] 0·60	[0·51] 0·63	[0·51] 0·63

Foot : I handsome and I (tall)

Rcd	SEGMENT DURATION												foot duration measurement		
	t	h	ɔ	l	(lʌ)	ə	z						A	B	C
I	0·08	0·10	0·25	0·06	0	0·07	0·09						0·65	0·47	0·47
II	0·08	0·06	0·39		0	0·03	0·09						0·65	0·51	0·51
III	0·19	0·03	0·32	0·14	0	0·17	0·08						0·93	0·71	0·71
IV	0·14	0·09	0·27	0·24	0·54	0·06	0·11						(0·74) / 0 72	[0·51]	[0·51] / 0 49
V	0·16	0·05	0·55		0·30	0·15	0·12						(0·76) / 0·66	0·55	0·55 / 0·45
VI	0·17	0·07	0·26	0·17	0	0·09	0·09						0·85	0·61	0·61

Foot : | tall as | (you)

Rcd	SEGMENT DURATION												foot duration measurement		
	J	u											A	B	C
I	0·42												0·42	—	0·42
II	0·34												0·34	—	0·34
III	0·31												0·31	—	0·31
IV	0·28												0·28	—	0·28
V	0·47												0·47	—	0·47
VI	0·31												0·31	—	0·31

Foot : | you |

TABLES: SECOND SET

Types of feet; durations

Rcd	Filled Feet				Unbounded		Partially Filled			
	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2syll	
					/p	/p	p/	(p)/	p/	(p)/
		0·83	0·67	0·66	0·46	0·82	0·17	0·05	0·31	0·19
	0·40	0·46	0·93	0·79	0·66	0·78	0·46	0·15	0·70	0·34
		0·44	0·85	0·67	0·41	0·73			0·74	0·40
		0·56			0·42	0·69				
		0·63			0·30	0·60				
		0·59			0·42	0·94				
		0·61								
I		0·49								
		0·47								
		0·39								
		0·41								
		0·44								
		0·42								
		0·46								
		0·65								
		7·85	2·45	2·12	2·67	4·56	0·63	0·20	1·75	0·93
	0·40	$T_2 = 0·52$	$T_3 = 0·81$	$T_4 = 0·70$	$T_{1/p} = 0·44$	$T_{2/p} = 0·76$	$T_{1p/} = 0·31$	$T_{1(p)/} = 0·10$	$T_{2p/} = 0·58$	$T_{2(p)} = 0·31$

Measurement : A

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2 syll	1syll		2 syll	
		0·71	0·50	0·55	0·34	0·59	0·21	0·04	0·19	0·15
	0·30	0·36	0·75	0·69	0·72	0·51	0·81	0·07	0·20	0·19
		0·34	0·59	0·51	0·59	0·54			0·40	0·15
		0·45			0·53	0·72				
		0·44			0·38	0·50			0·37	0·22
		0·53			0·36					
					0·34	0·85				
II		0·49								
		0·44								
		0·41								
		0·31								
		0·55								
		0·33								
		0·30								
		0·65								
		6·31	1·84	1·75	3·26	3·71	1·02	0·11	1·16	0·71
	0·30	$T_2 = 0·45$	$T_3 = 0·61$	$T_4 = 0\ 58$	$T_{1/p} = 0·46$	$T_{2/p} = 0·61$	$T_{1p/} = 0·51$	$T_{1(p)/} = 0·05$	$T_{2p/} = 0·29$	$T_{2(p)/} = 0·17$

Measurement : A

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2 syll	
III	0·60	0·89	0·75	0·82	0·45	0 58	0 60	0 09	0 27	0 21
		0·52	0·98	1·05		0 55	0 52	0 08	–	–
		–	0·97	0·73		0 67			–	–
		0·68			0·56	0 92			0·96	0 40
		0·67			0·43	0 69				
		0·73			0·51	0 70				
		–			0·31					
		0·75								
		0·65								
		0·75								
		0·37								
		0·54								
		0·70								
		0·49								
		0·39								
		0·93								
		9·06	2·70	2·60	2·26	4·11	1·12	0·17	1·23	0·61
	0·60	$T_2 = 0·64$	$T_3 = 0·90$	$T_4 = 0·86$	$T_{1/p} = 0·45$	$T_{2/p} = 0·68$	$T_{1p/} = 0·56$	$T_{1(p)} = 0·08$	$T_{2p/} = 0·61$	$T_{2(p)} = 0·30$

Measurement : A

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2 syll	1 syll		2 syll	
IV	0·35	0·87 0·70 0·59 0·98 0·87 – – – 0·75 – – – – – 0·37 –			0·43 0·79 0·62 0·49 0·53 0·42 0·28	0·78 0·53 0·85 – – 0·82	0·71 1·48	0·07 0·18	0·44 0·75 1·31 1·43	0·31 0·19 0·16 0·31
		5·13			3·56	2·98	2·19	0·25	3·93	0·97
	0·35	$T_2 = 0·73$			$T_{1/p} = 0·50$	$T_{2/p} = 0·74$	$T_{1p/} = 1·09$	$T_{1(p)} = 0·12$	$T_{2p/} = 0·98$	$T_{2(p)} = 0·24$

Measurement : A

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2 syll	
V	0·59	0·82 0·48 0·73 0·70 0·80 0·95 – – 0·66 0·52 0·60 0·68 – 0·55 0·51 –		1·08 0·66	0·50 0·68 0·61 0·50 0·49 0·57 0·47	0·68 0·61 0·81 0·82 0·67 1·06	0·48 1·14	0·09 0·10	0·27 0·67 1·24 1·09	0·22 0·25 0·28 0·38
		8·00		1·74	3·82	4·65	1·62	0·19	3·27	1·13
	0·59	T_2 = 0·66		T_{l_4} = 0·87	$T_{1/p}$ = 0 54	$T_{2/p}$ = 0 77	$T_{1p/}$ = 0 81	$T_{1(p)}$ = 0·09	$T_{2p/}$ = 0·81	$T_{2(p)}$ = 0·28

Measurement : A

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2syll	
VI	0·45	0·62	0·56	0·68	0·34	0·50	0·38	0·06	0·23	0·18
		0·49	0·67	0·74	–	0·42	0·91	0·07	1·05	0·29
		0·49	–	0·65	0·50	0·63			1·10	0·28
		0·53			0·42	0·75				
		0·65			0·46	0·49				
		0·70			0·42	0·67				
		–			0·31					
		–								
		0·52								
		–								
		0·46								
		0·45								
		0·44								
		0·32								
		0·39								
		0·85								
		6·91	1·23	2·07	2·45	3·46	1·29	0·13	2·38	0·75
	0·45	$T_2 = 0·53$	$T_3 = 0·61$	$T_4 = 0·69$	$T_{1/p} = 0·40$	$T_{2/p} = 0·57$	$T_{1p/} = 0·64$	$T_{1(p)/} = 0·06$	$T_{2p/} = 0·79$	$T_{2(p)} = 0·25$

Measurement : A

Gen Mean	1syll	2 syll	3 syll	4 syll	1syll	2 syll	1 syll		2 syll	
Type A	X_1=0·45	X_2 = 0·57	X_3 = 0·74	X_4 = 0·73	$X_{1/P}$ = 0·47	$X_{2/P}$ =0·69	$X_{1P/}$=0·65	$X_{1(P)}$ =0·08	$X_{2P/}$=0·68	$X_{2(P)}$=0·25

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2syll	
		0·73	0·63	0·72	0·42	–	0	0	–	–
	0·46	0·49	0·97	0·65	–	0·71	0	0	–	–
		0·37	0·93	0·82	0·33	0·62	0·31	0·19	0·44	0·32
		0·70			0·33	–	0·55	0·24	0·74	0·38
		0·58			–	–			0·85	0·51
		0·60			–	–				
		0·58								
		0·59								
I		0·52								
		–								
		0·51								
		0·46								
		0·33								
		–								
		0·47								
		0·47								
		7·40	2·53	2·19	1·08	1·33	0·86	0·43	2·03	1·21
	0·46	T_2 =0·52	T_3 =0·84	T_4 =0·73	$T_{1/p}$ =0·36	$T_{2/p}$ =0·66	$T_{1p/}$=0·43	$T_{1(p)}$=0 21	$T_{2p/}$=0·67	$T_{2(p)}$=0·40

Measurement : B

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2 syll	1 syll		2 syll	
II		–	0·47	0·61	0·34	0·50	0	0	0·25	0·21
		0·38	0·72	0·57	0·64	0·45	0	0	0·26	0·25
		0·34	0·68	–	0·48	–	0·33	0·16	0·48	0·23
		0·57					0·87	0·13		
		0·41								
		–								
		0·49								
		0·34								
		0·52								
		–								
		0·49								
		0·35								
		0·48								
		0·39								
		0·32								
		0·51								
		5·59	1·87	1·18	1·46	0·95	1·20	0·29	0·99	0·69
		$T_2 = 0·43$	$T_3 = 0·62$	$T_4 = 0·59$	$T_{1/p} = 0·48$	$T_{2/p} = 0·47$	$T_{1p/} = 0·60$	$T_{1(p)} = 0·14$	$T_{2p/} = 0·33$	$T_{2(p)} = 0·23$

Measurement : B

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2syll	
III		–	0·67	0·82	0·45	0·50	0	0	0·35	0·29
		0·50	1·06	0·88	–	0·47	0	0	–	–
		–	1·00	–	–	0·56	0·64	0·23	–	–
		–			0·49		0·73	0·29	–	–
		0·61			–					–
		0·84			–					
		–			–					
		0·75								
		0·67								
		–								
		0·49								
		0·50								
		–								
		–								
		0·39								
		0·71								
		5·46	2·73	1·70	0·94	1·53	1·37	0·52	0·35	0·29
		$T_2 = 0·61$	$T_3 = 0·91$	$T_4 = 0·85$	$T_{1/p} = 0·47$	$T_{2/p} = 0·51$	$T_{1p/} = 0·68$	$T_{4(p)} = 0·26$		

Measurement : B

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2 syll	1syll		2 syll	
IV		0·69			0·29	0·63		0	0·53	0·40
		0·79			0·70	0·44		0	0·87	0·31
		0·48			–	–	0·89	0·25	1·45	0·30
		–			0·42		1·59	0·29		
		0·73			–					
		–			–					
		–			–					
		–								
		0·77								
		–								
		–								
		0·58								
		–								
		–								
		0·32								
		–								
		4·36			1·41	1·07	2·48	0·54	2·85	1·01
		$T_2 = 0·62$			$T_{1/p} = 0·47$	$T_{2/p} = 0·53$	$T_{1p/} = 1·24$	$T_{1(p)} = 0·27$	$T_{2p/} = 0·95$	$T_{2(p)} = 0\ 33$

Measurement : B

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2 syll	
V	–	0·78 0·58 0·62 – 0·72 – – – 0·72 – 0·74 0·65 – – 0·60 –	0·61	0·88 0·77	0·35 0·61 – 0·41 – – –	0·50 0·56 –	0·67 1·24	0·28 0·20	0·32 0·79 1·41 1·20	0·27 0·37 0·45 – 0 49
		5·41	0·61	1·65	1·37	1·06	1·91	0·48	3·72	1·58
		$T_2 = 0·67$		$T_4 = 0·82$	$T_{1/p} = 0·45$	$T_{2/p} = 0·53$	$T_{1p/} = 0·95$	$T_{1(p)} = 0·24$	$T_{2p/} = 0·93$	$T_{2(p)} = 0·93$

Measurement : B

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2syll	
VI	–	0·56 0·62 0·39 – 0·44 – – 0·58 – 0·58 0·45 0·37 – 0·40 0·85	0·55 0·75 –	0·65 0·53 –	0·24 0·50 – 0·35 – – –	0·42 0·35 –	0·54 0·98	0·22 0·14	0·30 – 1·18 – –	0·25 – 0·42 – –
		5·24	1·30	1·18	1·09	0·77	1·52	0·36	1·48	0·67
		$T_2 = 0·52$	$T_3 = 0·65$	$T_4 = 0·59$	$T_{1/p} = 0·36$	$T_{2/p} = 0·38$	$T_{1p/} = 0·76$	$T_{1(p)} = 0·18$	$T_{2p/} = 0·74$	$T_{2(p)} = 0·33$

Measurement : B

Gen Mean										
	1syll	2 syll	3 syll	4 syll	1syll	2 syll	1syll		2 syll	
Type B	–	$X_2 = 0{\cdot}58$	$X_3 = 0{\cdot}75$	$X_4 = 0{\cdot}71$	$X_{1/P} = 0{\cdot}43$	$X_{2/P} = 0{\cdot}51$	$X_{1P/} = 0{\cdot}77$	$X_{1(P)} = 0{\cdot}21$	$X_{2P/} = 0{\cdot}71$	$X_{2(P)} = 0{\cdot}34$

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2 syll	1syll		2 syll	
		0·69	0·54	0·72	0·46	0·69	0·31	0·19	–	–
	0·50	0·52	0·93	0·65	0·49	0·78	0·46	0·15	–	–
		0·35	0·93	0·73	0·41	0·66			0·44	0·32
		0·73			0·30	0·63			0·70	0·34
		0·48				0·60			0·74	0·40
		0·66				0·71				
		0·62								
		0·59								
I		0·52								
		0·47								
		0·51								
		0·36								
		0·37								
		0·42								
		0·47								
		0·47								
		8·23	2·40	2·10	1·66	4·07	0·77	0·34	1·88	1·06
	0·50	T_2 = 0·51	T_3 = 0·80	T_4 = 0·70	$T_{1/p}$ = 0·41	$T_{2/p}$ = 0·67	$T_{1p/}$ = 0·38	$T_{1(p)/}$ = 0·17	$T_{2p/}$ = 0·62	$T_{2(p)/}$ = 0·35

Measurement : C

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2 syll	
		–	0·42	0·61	–	0·53	0·33	0·16	0·19	0·15
	0·35	0·39	0·75	0·57	0·72	0·51	0·81	0·07	0·20	0·19
		0·39	0·68	0·51	0·41	0·54			0·48	0·23
		0·63			0·53	0·72			–	–
		0·34			–	0·50			0·37	0·22
		0·53			0·36	0·73				
		–								
		–								
II		0·52								
		0·44								
		0·49								
		0·23								
		0·55								
		0·33								
		0·32								
		0·51								
		5·67	1·85	1·69	2·02	3·53	1·14	0·23	1·24	0·79
	0·35	T_2 = 0·43	T_3 = 0·61	T_4 = 0·56	$T_1/_p$ = 0·50	$T_2/_p$ = 0·58	$T_{1p}/$ = 0·57	$T_{1(p)}/$ = 0·11	$T_{2p}/$ = 0·31	$T_{2(p)}$ = 0·19

Measurement : C

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2 syll	
III	0·79	–	0·60	0·82	–	0·61	0·64	0·23	0·27	0·21
		0·61	0·98	0·88	–	0·55	0·52	0·08	–	–
		–	1·00	0·77	0·54	0·67			–	–
		0·88			0·56	0·88			–	–
		0·51			–	0·69			0·96	0·40
		0·73			0·51	0·56				
		–								
		0·75								
		0·67								
		0·75								
		0·49								
		0·50								
		–								
		0·49								
		0·39								
		0·71								
		7·48	2·58	2·47	1·61	3·96	1·16	0·31	1·23	0·61
	0·79	$T_2 = 0·62$	$T_3 = 0·86$	$T_4 = 0·82$	$T_1/_P = 0·53$	$T_2/_P = 0·66$	$T_{1P}/ = 0·58$	$T_{1(P)}/ = 0·15$	$T_{2P}/ = 0·61$	$T_{2(P)}/ = 0·30$

Measurement : C

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2syll	
		0·55			0·43	0·69	0·89	0·25	0·44	0·31
	0·47	0·82			0·79	0·53	1·48	0·18	0·75	0·19
		0·47			0·37	0·85			1·45	0·30
		1·23			0·49	–			–	–
		0·60			–	–			1·43	0·31
		–			0·42	0·72				
		–								
		–								
IV		0 77								
		–								
		–								
		–								
		–								
		–								
		0·32								
		–								
		4·76			2·50	2·79	2·37	0·43	4·07	1·11
	0·47	$T_2 = 0·68$			$T_1/_P = 0·50$	$T_2/_P = 0·69$	$T_{1P}/ = 1·18$	$T_{1(P)} = 0·21$	$T_{2P}/ = 1·01$	$T_{2(P)}/ = 0·27$

Measurement : C

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2 syll	1syll		2 syll	
V		0·63 0·60 0·62 – 0·61 – – – 0·72 0·52 0·74 0·54 – 0·55 0·60 –	0·52	0·88 0·66 0	0·50 0·68 0·43 0·50 – 0·57	0·56 0·61 0·81 0·82 0·67 0·82	0·67 1·14	0·28 0·10	0·27 0·67 1·41 – 1·09	0·22 0·25 0·45 – 0·38
		6·13		1·54	2·68	4·29	1·81	0·38	3·44	1·30
		T_2 = 0·61	T	T_4 = 0·77	$T_{1/p}$ = 0·53	$T_{2/p}$ = 0·71	$T_{1p/}$ = 0·90	$T_{1(p)}$ = 0·19	$T_{2p/}$ = 0·86	$T_{2(p)}$ = 0·32

Measurement : C

Rcd	1syll	2 syll	3 syll	4 syll	1syll	2syll	1syll		2 syll	
VI	0·59	0·46	0·43	0·65	0·34	0·45	0·54	0·22	0·23	0·18
		0·54	0·62	0·65	0·60	0·42	0·91	0·07	–	–
		0·37		0·53	0·33	0·63			1·18	0·42
		0 70			0·42	0·75			–	–
		0·35			–	0·49			1·10	0·28
		–			0·42	0·51				
		–								
		–								
		0·58								
		–								
		0·58								
		0·33								
		0 44								
		0·32								
		0·40								
		0 61								
		5·68	1·05	1·83	2·11	3·25	1·45	0·29	2·51	0·88
	0·59	T_2 = 0·47	T_3 = 0·52	T_3 = 0·61	$T_{1/p}$ = 0·42	$T_{2/p}$ = 0·54	$T_{1p/}$ = 0·72	$T_{1(p)/}$ = 014	$T_{2p/}$ = 0·83	$T_{2(p)}$ = 0·29

Measurement : C

Gen Mean	1syll	2 syll	3 syll	4 syll	1 syll	2 syll	1 syll		2 syll	
Type C	$X_1 = 0.54$	$X_2 = 0.54$	$X_3 = 0.70$	$X_4 = 0.68$	$X_{1/p} = 0.50$	$X_{2/p} = 0.64$	$X_{1p/} = 0.72$	$X_{1(p)} = 0.16$	$X_{2p/} = 0.71$	$X_{2(p)} = 0.28$

TABLES: THIRD SET

Types of feet; ratios

	Filled Feet ← No of syll per foot →					
Rcd	1 : 2	2 : 3	3 : 4	1 : 3	1 : 4	2 : 4
I	0·40 : 0·52	0·52 : 0·81	0·81 : 0·70	0·40 : 0·81	0·40 : 0·70	0·52 : 0·70
Ratio	1·3	1·6	0·9	2	1·8	1·3
II	0·30 : 0·45	0·45 : 0·61	0·61 : 0·58	0·30 : 0·61	0·30 : 0·58	0·45 : 0·58
Ratio	1·5	1·4	1	2	1·9	1·3
III	0·60 : 0·64	0·64 : 0·90	0·90 : 0·86	0·60 : 0·90	0·60 : 0·86	0·64 : 0·86
Ratio	1·1	1·4	1	1·5	1·4	1·3
IV	0·35 : 0·73	——	——	——	——	——
Ratio	2·1	——	——	——	——	——
V	0·59 : 0·66	——	——	——	0·59 : 0·87	0·66 : 0·87
Ratio	1·1	——	——	——	1·5	1·3
VI	0·45 : 0·53	0·53 : 0·61	0·61 : 0·69	0·45 : 0·61	0·45 : 0·69	0·53 : 0·69
Ratio	1·2	1·2	1·1	1·4	1·5	1·3
Gen Mean	0·45 : 0·57	0·57 : 0·74	0·74 : 0·73	0·45 : 0·74	0·45 : 0·73	0·57 : 0·73
Ratio G\M	1·3	1·3	1	1·6	1·6	1·3

Average Foot Ratio (A)

	Combination With Pauses No of syll per foot							
Rcd	1 : 1/p	1 : 2/p	2 : 2/p	1 : 1p/	1p/ : 1(p)/	2 : 2p/	2p/ 2(p)/	1p/ : 2p/
I	0·40 : 0·44	0·44 : 0·76	0·52 : 0·76	0·40 : 0·31	0·31 : 0·10	0·52 : 0·58	0·58 : 0·31	0·31 : 0·58
Ratio	1·1	1·7	1·5	0·8	0·3	1·1	0·5	1·9
II	0·30 : 0·46	0·46 : 0·61	0·45 : 0·61	0·30 : 0·51	0·51 : 0·05	0·45 : 0·29	0·29 : 0·17	0·51 : 0·29
Ratio	1·5	1·3	1·4	1·7	0·1	0·6	0·6	0·6
III	0·60 : 0·45	0·45 : 0·68	0·64 : 0·68	0·60 : 0·56	0·56 : 0·08	0·64 : 0·61	0·61 : 0·30	0·56 : 0·61
Ratio	0·8	1·5	1·1	0·9	0·1	1	0·5	1·1
IV	0·35 : 0·50	0·50 : ·74	0·73 : 0·74	0·35 : 1·09	1·09 : 0·12	0·73 : 0·98	0·98 : 0·24	1·09 : 0·98
Ratio	1·4	1·5	1	3·1	0·1	1·3	0·2	0·9
V	0·59 : 0·54	0·54 : 0·77	0·66 : 0·77	0·59 : 0·81	0·81 : 0·09	0·66 : 0·81	0·81 : 0·28	0·81 : 0·81
Ratio	0·9	1·4	1·2	1·4	0·1	1·2	0·3	1
VI	0·45 : 0·40	0·40 : 0·57	0·53 : 0·57	0·45 : 0·64	0·64 : 0·06	0·53 : 0·79	0·79 : 0·25	0·64 : 0·79
Ratio	0·9	1·4	1·1	1·4	0·1	1·5	0·3	1·2
Gen Mean	0·45 : 0·47	0·47 : 0·69	0·57 : 0·69	0·45 : 0·65	0·65 : 0·08	0·57 : 0·68	0·68 : 0·25	0·65 : 0·68
Ratio G\M	1	1·5	1·2	1·4	0·1	1·2	0·4	1

Average Foot Ratio (A)

	← Filled Feet No of syll per foot →					
Rcd	1 : 2	2 : 3	3 : 4	1 : 3	1 : 4	2 : 4
I	0·46 : 0·52	0·52 : 0·84	0·84 : 0·73	0·46 : 0·84	0·46 : 0·73	0·52 : 0·73
Ratio	1·1	1·6	0·9	1·8	1·6	1·4
II	——	0·43 : 0·62	0·62 : 0·59	——	——	0·43 : 0·59
Ratio	——	1·4	1	——	——	1·4
III	——	0·61 : 0·91	0·91 : 0·85	——	——	0·61 : 0·85
Ratio	——	1 5	0·9	——	——	1·4
IV	——	——	——	——	——	——
Ratio	——	——	——	——	——	——
V	——	0·67 : 0·61	0·61 : 0·82	——	——	0·67 : 0·82
Ratio	——	0·9	1·3	——	——	1·2
VI	——	0·52 : 0·65	0·65 : 0·59	——	——	0·52 : 0·59
Ratio	——	1·3	0·9	——	——	1·1
Gen Mean	——	0·58 : 0·75	0·75 : 0·71	——	——	0·58 : 0·71
Ratio G\M	——	1·3	0·9	——	——	1·2

Average Foot Ratio (B)

	Combination With Pauses No of syll per foot							
Rcd	1 : 1/p	1 : 2/p	2 2/p	1 : 1p/	1p/ : /(p)/	2 : 2p/	2p/ 2(p)/	1p/ : 2p/
I	0·46 : 0·36	0·36 : 0·66	0·52 : 0·66	0·46 : 0·43	0·43 : 0·21	0·52 : 0·67	0·67 : 0·40	0·43 : 0·67
Ratio	0·8	1·8	1·3	0·9	0·5	1·3	0·6	1·6
II	——	0·48 : 0·47	0·43 : 0·47	——	0·60 : 0·14	0·43 : 0·33	0·33 : 0·23	0·60 : 0·33
Ratio	——	1	1·1	——	0·2	0·8	0·7	0·6
III	——	0·47 : 0·51	0·61 : 0·51	——	0·68 : 0·26	0·61 : 0·35	0·35 : 0·29	0·68 : 0·35
Ratio	——	1·1	0·8	——	0·4	0·6	0·8	0 5
IV	——	0·47 : 0·53	0·62 : 0·53	——	1·24 : 0·27	0·62 : 0·95	0·95 : 0·33	1·24 : 0·95
Ratio	——	1·1	0·9	——	0·2	1·5	0·3	0·8
V	——	0·45 : 0·53	0·67 : 0·53	——	0·95 : 0·24	0·67 : 0·93	0·93 : 0·39	0·95 : 0·93
Ratio	——	1·2	0·8	——	0·3	1·4	0·4	1
VI	——	0·36 : 0·38	0·52 : 0·38	——	0·76 : 0·18	0·52 : 0·74	0·74 : 0·33	0·76 : 0·74
Ratio	——	1·1	0·7	——	0·2	1·4	0·4	1
Gen Mean	——	0·43 : 0·51	0·58 : 0·51	——	0·77 : 0·21	0·58 : 0·71	0·71 : 0·34	0·77 : 0·71
Ratio G\M	——	1·2	0·9	——	0·3	1·2	0·5	0·9

Average Foot Ratio (B)

	← Filled Feet No of syll per foot →					
Rcd	1 : 2	2 : 3	3 : 4	1 : 3	1 : 4	2 : 4
I	0·50 : 0·51	0·51 : 0·80	0·80 : 0·70	0·50 : 0·80	0·50 : 0·70	0·51 : 0·70
Ratio	1	1·6	0·9	1·6	1·4	1·4
II	0·35 : 0·43	0·43 : 0·61	0·61 : 0·56	0·35 : 0·61	0·35 : 0·56	0·43 : 0·56
Ratio	1·2	1·4	0·9	1·7	1·6	1·3
III	0·79 : 0·62	0·62 : 0·86	0·86 : 0·82	0·79 : 0·86	0·79 : 0·82	0·62 : 0·82
Ratio	0·8	1·4	1	1·1	1	1·3
IV	0·47 0·63	——	——	——	——	——
Ratio	1·4					
V	——	0·61 : 0·52	0·52 : 0·77	——	——	0·61 : 0·77
Ratio		0·9	1·5			1·3
VI	0·59 : 0·47	0·47 : 0·52	0·52 : 0·61	0·59 : 0·52	0·59 : 0·61	0·47 : 0·61
Ratio	0·8	1·1	1·2	0·9	1	1·3
Gen Mean	0·54 : 0·54	0·54 : 0·70	0·70 : 0·68	0·54 : 0·70	0·54 : 0·68	0·54 : 0·68
Ratio G\M	1	1·3	1	1·3	1·3	1·3

Average Foot Ratio (C)

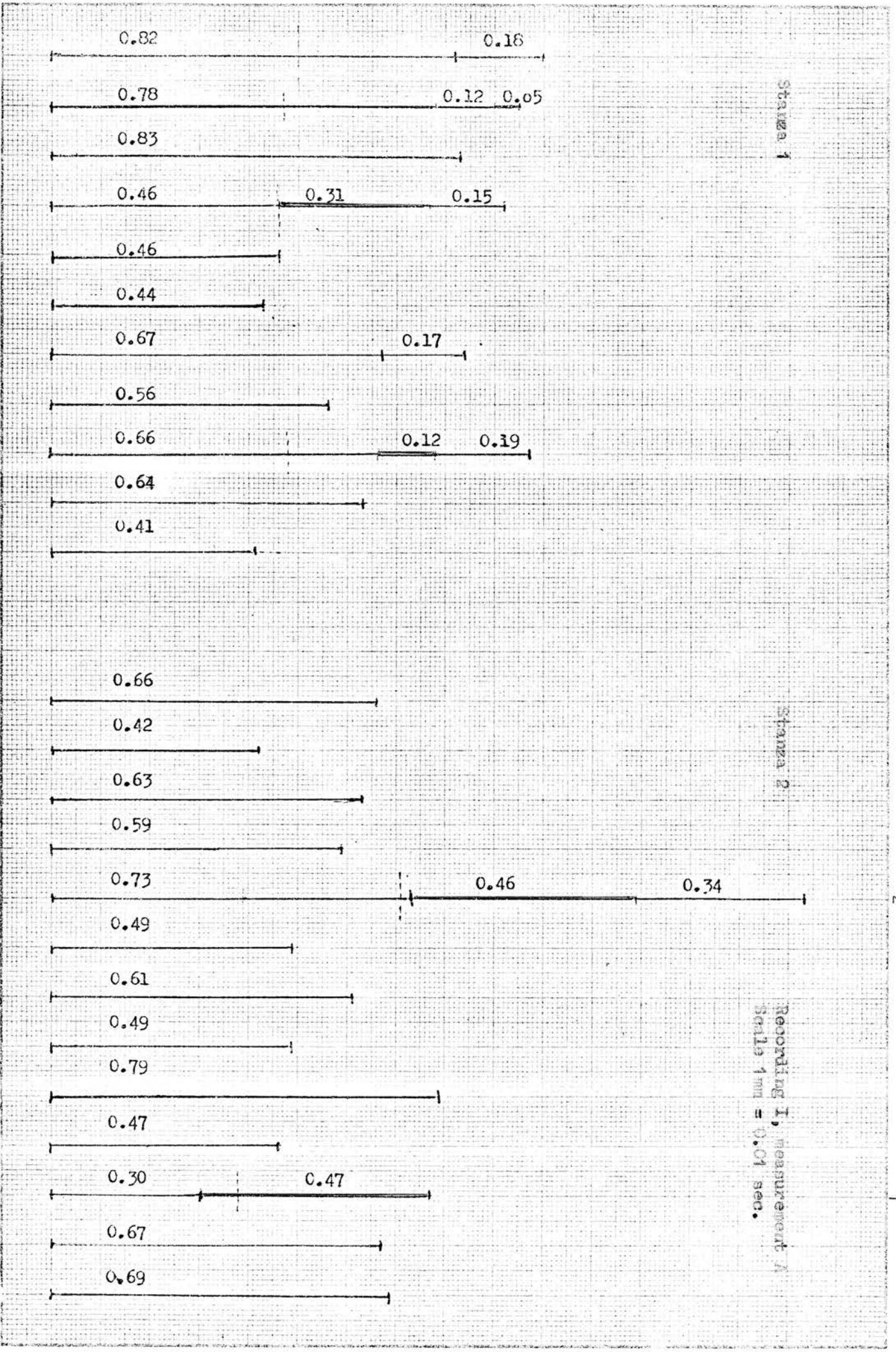
	Combination With Pauses No of syll per foot							
Rcd	1 : 1/p	1/p: 2/p	2 2/p	1 : 1p/	1p/ : /(p)/	2 : 2p/	2p/ 2(p)/	1p/ : 2p/
I	0·50 : 0·41	0·41 : 0·67	0·51 : 0·67	0·50 : 0·38	0·38 : 0·17	0·51 : 0·62	0·62 : 0·35	0·38 : 0·62
Ratio	0·8	1·6	1·3	0·8	0·4	1·2	0·6	1·6
II	0·35 : 0·50	0·50 : 0·58	0·43 : 0·58	0·35 : 0·57	0·57 : 0·11	0·43 : 0·31	0·31 : 0·19	0·57 : 0·31
Ratio	1·4	1·2	1·3	1·6	0·2	0·7	0·6	0·5
III	0·79 : 0·53	0·53 : 0·66	0·62 : 0·66	0·79 : 0·58	0·58 : 0 15	0·62 : 0 61	0·61 : 0 30	0·58 : 0·61
Ratio	0·7	1·2	1·1	0·7	0·3	1	0·5	1·1
IV	0·47 : 0·50	0·50 : 0·69	0 68 0 69	0 47 1 18	1 18 0 21	0 68 1 01	1 01 27	1 18 1 01
Ratio	1·1	1·4	1	2·5	0·2	1·5	0·3	0·9
V	———	0·42 : 0·54	0·61 : 0·54	———	0·90 : 0·19	0·61 : 0·86	0·86 : 0·32	0·90 : 0·86
Ratio		1·3	0·9		0·2	1·4	0·4	1
VI	0·59 : 0·42	0·42 : 0·54	0·47 : 0·54	0·59 : 0·72	0·72 : 0·14	0·47 : 0·83	0·83 : 0·29	0·72 : 0·83
Ratio	0·7	1·3	1·1	1·2	0·2	1·8	0·3	1·2
Gen Mean	0·54 : 0·50	0·50 : 0·64	0·54 : 0·64	0·54 : 0·72	0·72 : 0·16	0·54 : 0·71	0·71 : 0·28	0·72 : 0·71
Ratio G\M	9	1·3	1·2	1·3	0·2	1·3	0·4	1

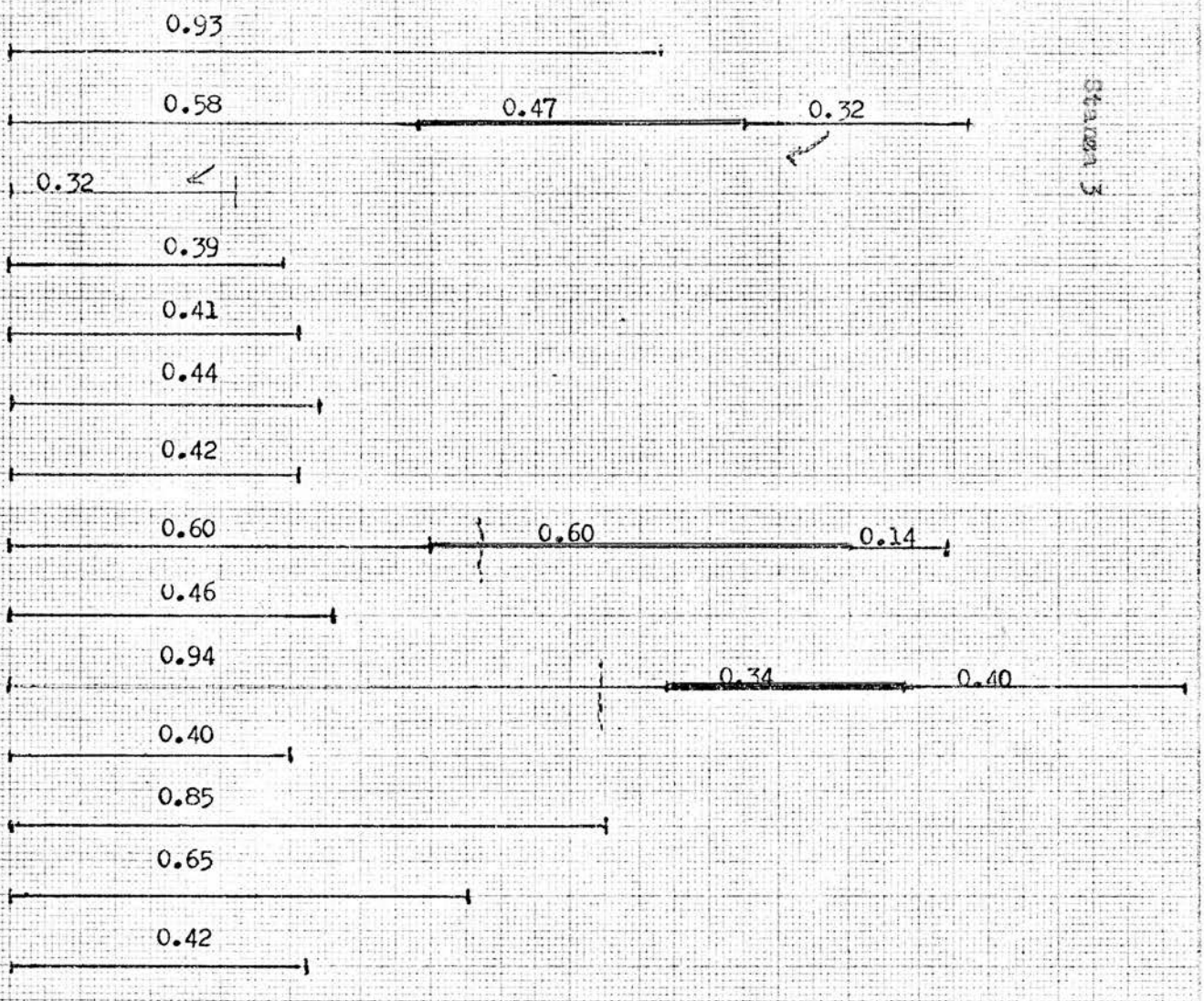
Average Foot Ratio (C)

TABLES: FOURTH SET

Foot duration in sequence, including estimated foot boundaries.

(one example)


0.82
0.18
0.78
0.12
0.05
0.83
0.46
0.31
0.15
0.46
0.44
0.67
0.17
0.56
0.66
0.12
0.19
0.64
0.41
Stanza 1
0.66
0.42
0.63
0.59
0.73
0.46
0.34
0.49
0.61
0.49
0.79
0.47
0.30
0.47
0.67
0.69
Stanza 2
Recording I, measurement A
Scale 1mm = 0.01 sec.



Stanza 3

Recording I, measurement A
Scale 1 mm = 0.01 sec.

Legend:
red - duration of pauses
whole numbers - number of syllables per foot
- estimated foot boundary.

Conclusion

Part I

My initial hypothesis concerning the intricate texture of rhythms in "anyone lived in a pretty how town" has been confirmed by the analyses.

Range of numerical patterns

An examination of lines in terms of the number of syllables per foot[1] had revealed a large range of patterns. This range, however, is not a haphazard collection of different patterns. It appears to have been constructed on certain definite principles which apply to all subgroups, each time with slight variations. The exceptions to this (2) were so few as to be negligible. The same principle was also found to operate on the lexical permutation in the refrains.

Two main groups were distinguished among the patterns:

a) those with three syllables as the highest number of syllables per foot

b) those with two syllables as the highest number of syllables per foot.

Given the four stress (consequently, four foot) structure of the line, the arithmetical possibilities of permutation in the first group (three as the highest number in a four place sequence) are 81, in the second group (two as the highest number in a four place sequence) are 16. From all these possibilities only a limited range was used.

The variation in the numerical patterns employed in the poem could be explained by postulating three basic patterns:

3 3 3 1
2 2 2 1
1 1 1 1

1. Foot is measured from one stress to the next, but not including it.

Each basic pattern is derived from the preceding basic pattern by one and the same rule: (-1)(-1)(-1), that is one subelement is subtracted from each element in the pattern. In this context, sub-element stands for "syllable", and element for "foot". The basic patterns are introduced in that order of derivation in stanza initial position, i.e. in the line beginning a stanza.

All the remaining patterns are variations on these through either subtraction or addition of one or two sub-elements at a time. This principle, of course, applies in varying degrees to the above patterns (e.g. only an upward direction was possible for modifications made from pattern 1 1 1 1).

A certain regularity has been traced in the positional combinations among the derived patterns. Since in all cases save two, the line ended in a stressed monosyllable, permutations were possible only within the first three positions (feet here) in the line. These were fully exploited with patterns containing one 3-syllable foot in the neighbourhood of two 2-syllable feet; and conversely, by patterns containing on 2-syllable foot next to two 3-syllable feet.

The fact that the principle underlying these permutations was the same for variations on patterns where the highest number of syllables per foot was three in both sub-classes has greatly contributed to an impression of cohesion among the patterns. This impression is further strengthened by the patterns where two is the highest number of syllables per foot. A similar tendency, with some variation, was found among them.

Numerical modifications in line transition

These were found to be based on several types of underlying rules. The most characteristic of these were modifications involving a change

in two elements (i.e. feet) by one sub-element (i.e. a syllable) at a time. That is to say, one syllable was either subtracted or added to each of two feet. The rule here was: $(\pm1)(\pm1)$; also one with reversed polarity $(+1)(-1)$.

A simpler rule involving one sub-element only (±1) was also used (two occurrences each), but was found to be of less importance in the rhythmic structure of the poem.

Another complex rule involved three elements. This rule $(-1)(\pm1)(\mp1)$ affected three feet and was used in a very skilful way to derive numerically reversed patterns in the group containing three as the highest number of syllables per foot, e.g.

3 2 3 1 → 2 3 2 1 or 3 3 2 1 → 2 2 3 1

The unidirectional modification $(+1)(+1)(+1)$ appears once; its opposite $(-1)(-1)(-1)$ does not appear.

Two rules of greater complexity also emerged, but the patterns to which they apply are no longer perceived as related. These rules produce disjunctive patterns.

One rule involved four sub-elements in three elements: $(-1)(-1)(-1)(\pm1)$, i.e. three feet are affected; two syllables are subtracted from one foot and one syllable from each of the remaining two feet.

The other 'rule' involves six sub-elements in three elements: $(-1)(-1)(-1)(-1)(-1)(-1)$, i.e. two syllables are subtracted from three feet in the pattern. This modification was used on one occasion only in order to juxtapose two basic patterns 3 3 3 1 and 1 1 1 1.

Rules of greater complexity have been held to be responsible for the failure of the regrouped versions of the first two lines in the poem in which the attractive deviant grammar was preserved, but the order of constituents was slightly changed (see section 'Selected Modifications').

Quantity patterns

These were found to be extremely varied, the number of different types of feet ranging from four to seven per stanza. However, after a more complex rule for numerical modifications had been discerned, an adjustment took place among the resultant quantity patterns so as to produce two feet of identical quantity pattern (IQP). This was found in fourteen cases out of the total of seventeen complex modifications. In this way, a move towards greater variety and complexity was balanced by a tendency to repetition and parallelism.

External Analysis

By comparison, the other poem, "my father moved through dooms of love", seems to be rather simple. There is frequent use of repetition, and it is technically less skilful as a result of the meagre number of patterns and types of modifications which appear in it.

In this poem which is nearly twice as long, only two basic patterns have been discovered : 2 2 2 1 and 3 2 2 1. Unlike "anyone", they are related by a rather simple rule: (± 1). The same rule appeared in a number of derived patterns.

This simple rule (± 1) was also found to operate twenty times in the line transition in this poem, compared with four times in "anyone".

The next rule in degree of complexity was the same as in "anyone" $(\pm 1)(\pm 1)$, with the possibilities of reversed polarity $(\pm 1)(\mp 1)$ fully exploited.

This rule of change in two elements was found eight times. It is this underlying principle of modification that creates the impression of the two poems being related and having a certain degree

of rhythmical resemblance (in addition to the grammatical innovations in both).

Of other complex modifications (+1)(+1)(-1) for three elements was used only once. Similarly, (-1)$\overset{\frown}{(+1)(+1)}$ for two elements appeared once only.

On one occasion the rule ($\pm$1) for one element was found to have a complex 'equivalent' in rule $\overset{\frown}{(+1)(+1)}$, also for one element.

In addition to the limited numerical modifications, identical quantity pattern (IQP) appeared thirty one times in this poem, including occasions when the repetition was extended to all three positions.

To compensate for this more limited range of numerical modifications, an element of variation had to enter into the arrangement of quantity patterns of otherwise (numerically) identical feet. These, indeed, show a great deal of variety. The variations among them are reducible to a few typological schemes which I have discussed in detail in the section entitled 'Patterns and Modifications, Typology'.

The above comparisons reveal that the essential difference between the two poems lies in the shift in rhythmic emphasis. In "anyone", rhythmic interest is sustained by the complex and varied modifications in the numerical component; in "my father", through subtle and varied modifications in the quantitative component.

Part II

The relation of performance to scansion

Variation was found in all the places predicted, that is metrical pauses were occasionally introduced by one or more speakers into a given syntactic structure, or the postulated silent stresses were not realized as silence (or the period of the expected silence was diminished) with a consequent lengthening of the preceding sound. This has been shown on the first set of tables. The length of the metrical pauses corresponded to the degree of cohesion of the syntactic structures in which they appeared, or to the speaker's interpretation of the degrees of cohesiveness where alternative interpretations were possible.

In this way, the length of pauses seemed to indicate that 'Phlebas/the Phoenician' was felt to be more closely related than 'Phlebas the Phoenician/a fortnight dead, and this main NP was in turn separated by a longer metrical pause from the main VP 'Forgot the cry of gulls'.

The introduction of pauses is also possible in constructions with the conjunction 'and', before adjuncts and between the NP and VP immediately dominated by the topmost symbol S.

On one occasion no silence was found to correspond to the silent foot postulated between such an NP and VP, but an examination of the segment duration in the adjoining feet revealed their considerable lengthening which might be interpreted as indicating that the syntactic break had influenced the speaker. This happened with

'A |current under |sea | ∧ |

|Picked his | bones in |whispers.'

The longest closure for the /p/ here was found to be 0.28 sec. followed by aspiration 0.02; the preceding /i/ was lengthened

here to 0.32. The longest syllable, /si/ was found to measure 0.53 in this example.

On the whole, the number of performances involving variations from the scansion was rather limited. After indicating these on the first set of tables, I confined myself to using as information for my next two sets of tables only occasions where speakers did not differ from the postulated scansion.

Segments

From this material, it is not possible to generalize about segment quantity, though certain observations may be made. A tendency for segments to show inherent length, observed by others, was also noticed here, yet it was clear that the segment durations became adjusted to the length of higher rhythmic units (syllable, word, foot). Speakers could be grouped according to the tendencies they displayed in the ratios between segments. For example, in the first foot / f l i b a s /, the ratio between /l/ and /i/ was 1:3 for three recordings (the actual durations being 0.05: 0.15, 0.03: 0.09 twice), 1:2 for two speakers (0.05: 0.11, 0.06: 0.12) and 1:4 for the poet (0.03: 0.13). The following segment /b/ remained in approximately 1:2 ratio in relation to the preceding vowel /i/ (actual durations: 0.07: 0.15, 0.04: 0.09, 0.06: 0.11, 0.05: 0.12, 0.05: 0.09). This differed a little more for the poet, 0.08: 0.13 who was, of course, American.

A great deal of similarity was observed both in the segment ratios and the actual segment durations between two speakers who spoke at a similar rate. These were David Abercrombie in recording II and Robin Holmes, recording VI. This was noticed even in the segments of the first foot / f l i b a s /:

Abercrombie: 0.06 0.03 0.09 0.04 0.17 0.20

Holmes: 0.05 0.03 0.09 0.05 0.16 0.12

Holmes shows a tendency to shorten the final sounds by comparison with Abercrombie (this remark is based on an examination of more than one foot). By contrast, it was revealed on other tables that Abercrombie's initial sounds tend to be shorter than Holmes's. In other places where the durations deviated slightly, often the sum total of either adjoining segments or of the whole syllable remained constant for both these speakers.

Other speakers showed close similarity at a few points only: recordings III, V and IV, all of which were marked by a slower rate of delivery. (Examples: |Phlebas| (Phoe)|nician , |fortnight|, |deep sea|, |Profit and|, |passed the/, |stages of his|, |whirlpool|, |con|sider|, \Phlebas\, |handsome and| .)

Foot duration

This was found to vary considerably for each speaker. Certain ranges in foot durations became apparent for each speaker. These were probably due both to increases and decreases in tempo within the readings and to under-and over-shooting a target, and would seem to point to some degree of awareness in the speakers of certain tempi towards which frequent returns were made. The range of durations appeared to diminish when the duration of feet where the expected foot boundary had been estimated has been taken into consideration.

Two interpretations are possible here: either the length of feet differs according to type considered in terms of number of syllables per foot, in which case it would be hard to claim isochrony, or an overlap might exist among the duration ranges for different foot types through which an underlying tendency towards isochrony might manifest itself.

This was tested on the remaining two sets of tables. In the first, feet were grouped according to type and their chronological appearance within the given kind. (It has to be remembered that the evidence for feet marked "unbounded" and "partially-filled feet" was not based on the calculations of expected foot boundaries, but on measurements taken from the beginning of pause.) The weighted means calculated for each kind again show a range of durations.

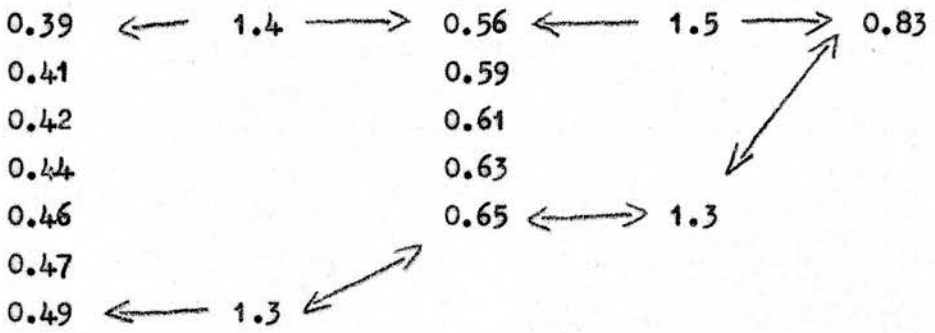
Ratios were next compared between these means on another set of tables (accurate to one decimal point). Those varied naturally according to type of measurement (A,B,C). They revealed that the different types of feet tended towards certain ratios, with under-and over-shooting, the most frequent being: 1, $1\frac{1}{3}$, $1\frac{1}{4}$, $1\frac{1}{2}$ in addition to other ratios being present. They varied from speaker to speaker. Where one speaker might show a tendency to 1 with overshooting (1:1) another might show a tendency to $1\frac{1}{2}$ with over-shooting (cf C, I, VI, in column 2:3 syllables per foot).

The ratios would appear to indicate that feet as types show a certain regularity, being not necessarily of identical length, but rather in proportion to one another.

Where does this leave isochrony?

Despite negative appearances here, it reasserts itself in these very types of feet, but in a more subtle way. It can be traced across the ranges of duration in the different kinds of feet. I have found this on examination of the tables showing the durations of the different types of foot. The data presented there seem to confirm the assumption about under-and over-shooting a target which has been somehow formulated internally by the speaker. After regrouping the feet according to similar durations the different ranges of duration become clear. (It should perhaps be mentioned here that the

differences recorded instrumentally within these ranges, may be scarcely, if at all, perceptible auditorily.) A comparison between types of feet can then be carried out and I shall examplify this here using recording I, measurement A: Filled feet, 2-syllables:



Ratios between end points in the ranges: 1.3, 1.4, 1.5.

Of 3-syllable feet (only three occurrences here, two of which are spoken at a slow tempo corresponding to a double measure), two could easily be accommodated within the range for 2-syllable feet: 0.67 and 0.85. The third on 0.93 corresponds to a double foot in the first range of durations in the 2-syllable feet. The durations shown for the 4-syllable feet 0.66, 0.67, 0.79 could also be accommodated within the range found for 2-syllable feet.

All occurrences except one (0.30) in 1-syllable feet followed by a silent stress correspond to two ranges in 2-syllable feet (0.41, 0.42, 0.46) and (0.66, 0.67). 2-syllable feet followed by a silent stress show a greater similarity with 3- and 4-syllable feet, having their starting point at an upper range of durations. They also correspond to 2-syllable partially filled feet. At end points (0.60 and 0.82) they overlap with 2-syllable filled feet.

One occurrence (out of a total of two) of partially filled feet containing one syllable only (0.46) corresponded to the lower range of durations in 2-syllable filled feet.

It is possible that variations in the length of feet may show themselves to be of less consequence when they are considered as

part of di-pods functioning within certain syntactic structures. It is probable that speakers, having internalized a beat, will tend to impart a similar length to phrases and clauses in such structures and I have noticed this tendency when I tried to add up the feet in structures of this kind for several speakers. This would introduce a higher level regularity into the rhythms.

The last two aspects, a tendency to proportional length distinction between different types of foot and at the same time to isochrony within the duration ranges in the feet might account for the conflicting impressions that English is both syncopated in rhythm and yet isochronous.

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