A COMPARISON OF THE TEXTUAL STRUCTURES

OF ARABIC AND ENGLISH WRITTEN TEXTS

A Study in the Comparative Orality

of Arabic

Volume 1

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submitted in accordance with the requirements
for the degree of
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ABSTRACT

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The aim of this thesis is to show how patterns of cohesion
and text development differ in English and Arabic, and in doing so
add to the growing literature showing that Arabic is still very
much an oral language, at least in comparison with English. That
is to say, Arabic tends to be written as if to be spoken, whereas
English is written as if to be read.

The approach taken is quantitative, and stands within the
Systemic Functional Model of Grammar, the Textual Component of
which has been modified to take into account some of the insights
gained by Prague School research into Functional Sentence Perspec-
tive.

The cohesive analysis, supported by statistical evidence,
shows that:

1. Arabic tends to avoid ellipsis.
2. Substitution is a marginal phenomenon in both English and
Arabic texts of the type analyzed. However, English tends to
use it more than Arabic.
3. The addresser and the addressee are given a higher profile in
the Arabic texts than in the English texts.
4. Arabic seems to use a higher proportion of pronouns than Eng-
lish.
5. English displays more use of cohesive synonym items than Ara-
bic.
6. Arabic displays more lexical string repetition than English.
7. Arabic displays more repetition of clause structure than Eng-
lish.
8. Arabic uses more multifunctional connectors than English.

In addition the analysis shows that English technical writing
favours greater thematic complexity than Arabic does, and differ-
ent patterns of thematic connection between sentences.

In short, the thesis demonstrates that those characteristics
which Ong claims are characteristic of an oral language are still
present in Arabic to a degree not true of English.

ABSTRACT
(Arabic Translation)

ملخص رسالة دكتوره

قدمها مالكلم باستون ولیامز

الى جامعة لیدز عام ١٩٨٦

و عنوانها . مقارنة بین البنى النصیة المستخدمة

فى اللغتین العربیة و الا نجلیزیة

دراسة فى شفویة اللغة العربیة النسبیة

تهدف الرسالة هذه الى تبیان أنماط التماسك و التطور
الموجودة فى النصوص و تحلیل الا ختلافات فى هذا المجال بین
اللغة الا نجلیزیة و اللغة العربیة ، و سأحاول من خلال هذا
التحلیل أن أضیف بعض الشىء الى المؤلفات التى تدل على أن اللغة
العربیة لا تزال لغة شفویة ، أى أنها تكتب بطریقة
تناسب القراءة بصوت عال .

الطریقة المستخدمة فى هذه الرسالة هى طریقة كمیة و تقع
ضمن النموذج المعروف بالنحو الوظیفى النظامى الذى یعدّل عنصره
النصى على ضوء بعض المفاهیم التى أدركها الباحثون التابعون
لمذهب براغ فى مجال النظرة الوظیفیة للجمل .

و یدل تحلیل تماسك النص الذى تسنده اثباتات أخصائیة على
ما یلى .

١. تتجنب اللغة العربیة الحذف الا یجازى .

٢. الا ستبدال ظاهرة هامشیة فى اللغة العربیة و اللغة
الا نجلیزیة الا أن استخدامه فى الا نجلیزیة أكثر
منه فى العربیة .

٣. یظهر المخاطِب و المخاطَب فى النصوص العربیة أكثر من
ظهورهما فى النصوص الا نجلیزیة .

٤. تستخدم العربیة نسبة أكبر من الضمائر مقارنة

بـالا°نجلـيزية .

٥. الا°نـجلـيزية أكثر أستخدامـا للمترادفـات لـتمـاسك النـص من العـربـية .

٦. العـربـية أكثر من الا°نجلـيزيـة تكرارا لـمجاميـع من الكلمـات المتتـابعـة .

٧. العـربـية أكثر من الا°نجلـيزيـة تكرارا للتـراكيب الجملـية .

٨. العـربـية أكثر أستخدامـا لا°دوات الوصل ذات الوظـائف الدلالـية المختـلفة .

و يثبت التحلـيل بـالا°ضافـة ألى ما ذكرنـاه أن الا°نجلـيزية المستخدمة فى المؤلـفـات ذات الطبـع التقنى تستخدم بنى أسـاديـة أكثر تعقيدا مما يرد فى اللغـة ألعربـية كمـا تستخدم أنمـاطا مختـلفة للاتصال النصى بين الجمل .

و الخلاصة فـأن هذه الرسـالـة تثبت أن أللغـة ألعربـية لا تزال فيهـا سمـات لغة شفويـة ألى حد يفوق ذلك فى اللغـة الا°نجلـيزية

.

Table of Contents

Volume 1

Volume Two

Figures and Tables

Arabic Transliteration

Symbol	Description
/b/	Voiced bilabial stop
/t/	Voiceless unaspirated dental stop
/t/	Velarized voiceless unaspirated dental stop
/d/	Voiced dental stop
/d/	Velarized voiced dental stop
/k/	Voiceless velar stop
/q/	Voiceless uvular stop
/'/	Glottal stop
/f/	Voiceless labio-dental fricative
/s/	Voiceless alveolar fricative
/s/	Velarized voiceless alveolar fricative
/z/	Voiced alveolar fricative
/z/	Velarized voiced alveolar fricative
/S/	Voiceless palatal groove fricative
/j/	Voiced palatal groove fricative
/T/	Voiceless dental-alveolar fricative
/D/	Voiced dental alveolar fricative
/x/	Voiceless uvular fricative
/g/	Voiced uvular fricative
/H/	Voiceless pharyngeal fricative
/9/	Voiced pharyngeal fricative
/h/	Voiced glottal fricative
/m/	Voiced bilabial nasal
/n/	Voiced alveolar nasal
/l/	Voiced alveolar lateral
/r/	Voiced alveolar roll
/w/	Voiced bilabial continuant
/y/	Voiced palatal continuant
/a:/	long open front vowel
/a/	short open front vowel
/u:/	long close rounded back vowel
/u/	short close rounded back vowel
/i:/	long close front vowel
/i/	short close front vowel

(N.B. If a velarized consonant occurs in a word then the whole of
the rest of the word is velarized, and all the vowels are realized
by relatively back allophones)

Realization Operands
(adapted from Mann and Matthiessen 1985)

Structure Building Realization Operands.

Include   includes a new grammatical function in the structure
while allowing it to be ellipted. (Operand taken
from Berry 1977)

Insert   places a new grammatical function into the overt real-
ization of the unit being formed.

Conflate   constrains two grammatical functions to be realized
by the same unit at lower rank.

Expand   creates structure within the overt realization, relat-
ing one grammatical function to another in a relation
of constituent to subconstituent.

Feature Associating Realization Operands.

Preselect associates a grammatical feature with a function

Classify associates a lexical feature with a function.

Outclassify   indicates that a lexical feature must be absent
in a particular feature set.

Lexify specifies a particular lexical item uniquely.

Order Constraining Realization Operands.

Order   introduces left-right relations into the overt realiza-
tion, constraining one group of functions to be real-
ized immediately to the left of another.

Partition   is equivalent to Order in requiring left-to-right
precedence, but it does not require adjacency.

OrderAtFront   and **OrderAtEnd** are used to order functional
constituents in initial and final positions
respectively.

System Negotiation Operands

Enter instructs the chooser to enter another system.

Reenter   instructs the chooser to enter a system previously
entered, thus allowing for recursion.

In the name of Jesus my Lord
the Everlasting Word of God
who took flesh that man might know God as Father
and was crucified that man might live in Him

To my wife Isis
and my children Monica and Rebecca
who have been very patient

APPENDICES

CHAPTER ONE

INTRODUCTION

1.1. Motivation for Research.

The initial stimulus for this research came while translating

a text from English into Arabic, and writing a paper on the lin-

guistic problems I faced in doing this translation. In the pro-

cess of translation, I rendered the text sentence by sentence into

idiomatic Arabic, while remaining faithful to the sentence order

and the sentence boundaries observed in the original. When, how-

ever, I presented the translation to a native speaker of Arabic,

she found that it was almost incomprehensible. In order to make

it comprehensible, we had to alter the sentence order of the orig-

inal and adjust the order of elements within the sentences so as

to make the theme of successive sentences more constant.

I decided to follow this up. After reading a number of Eng-

lish texts written by Arabic speakers my attention was drawn to

the flowery and repetitious language that many of them produced.

I then read Kaplan's article on the Semitic use of parallelism,

which I have discussed in some detail in my MA dissertation (Wil-

liams 1982). Here it is sufficient to note that he sees Arabic

thought as best illustrated in terms of a zigzag line moving grad-

ually from A to B (c.f. Figure 1.1a) whereas English thought

moves direcly from A to B by means of a straight line.

```
A  ------------                    A|
    ------------                    |
      ------------                  |
        ------------                |
          ------------ B           |B
```
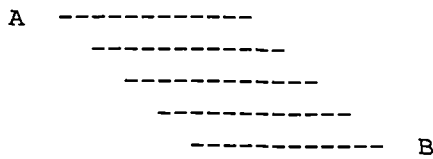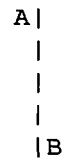
FIGURE 1.1a   FIGURE 1.1b

There are two problems with this analysis, although it does contain much truth and is developed very helpfully and fruitfully by Barbara Koch (Koch 1982). First of all, it appears very ethnocentric. Secondly, and more importantly, Kaplan does not illustrate how this works out in prose texts, where the process is much more subtle than that displayed in the Psalms, which he quotes extensively.

1.2. Scope and Limitations of Research.

Pursuing this line of enquiry in a way that would produce generalizable results demanded a detailed and quantitative contrastive analysis of cohesion in English and Arabic, drawing on a corpus consisting of a largish number of randomly selected texts and following broadly speaking the approach described in Halliday and Hassan 1976. This is not to denigrate studies based on small numbers of longer texts, for this type of study produces insights which can be tested by quantitative studies at a later stage. However, I felt that enough insights had been gained, and that the time had come for a strictly quantitative study.

My approach to theme and rheme owes more to the Prague School than it does to Halliday, and my discussion of conjunction, while still based on Halliday's categorization, has been much influenced

by Eugene Winter's work on clause relations. These are all dis-
cussed at greater length in the Literature Survey in Chapter 2.

The research is a straight contrastive study between English
and Arabic. Corpuses A and B are highly heterogeneous, being
selected from an English and an Arabic anthology respectively.
They are, however, comparable in that they are both supposed to be
a model at which writers of the two languages are encouraged to
aim. Corpuses C and D are all the beginnings of introductions to
MA theses in history. They are therefore very highly comparable
and one might expect them to be highly uniform in style.

Although it might be argued that the writers represented in
the anthologies come from different parts of the English speaking
and the Arabic speaking worlds, no attention has been paid to the
aspects of internal variation which could undoubtedly be
unearthed. Nor does it pay any attention to variation according
to text type. These are both interesting areas of research which
I hope to explore in the future. However, they definitely lie
outside the bounds of this study.

In the process of dividing the texts up into units I began to
investigate the phenomenon of pause and its relationship to infor-
mativity. This is discussed briefly in Chapter 3. It deserves a
far more detailed study than I have been able to give it here.
Another area where I am conscious of the need for far more
research than I have been able to devote to it here is the area of
clause relations. I made two attempts to do detailed research in
this area but came to the conclusion that further research needs

to be done on clause relation signalling within Arabic looked at
in its own terms before profitable work can be done in a contras-
tive study. Such an in-depth study of Arabic would be outside the
scope of this thesis.

1.3. Intended Users of Research.

I have tried in this research to keep my feet fixed as firmly as
possible on the ground while nevertheless seeking to make a con-
tribution to linguistic theory. One way of doing this is to ori-
ent one's research towards a particular group of potential consum-
ers. The potential consumers that I have in mind for this
research are:

    i.   teachers of English as a Foreign Language engaged in the
        teaching of written composition to Arabs.

    ii.   the Wycliffe Bible Translators and all those engaged in
        the demanding task of cross-cultural communication and
        translation.

1.4. Hypotheses to be Tested.

Running through this research were two basic hypotheses, the
second of which can conveniently be elaborated in terms of Ong's
list of the characteristics of an orally-based language. The two
hypotheses and their respective sub-hypotheses are listed below:

    A.   The unmarked clause relation in Arabic is the Matching
        Relation whereas the unmarked clause relation in English
        is the logical sequence relation. Distinguishing between
        the levels of form and meaning (cf. Section 2.3.1.2.1.),
        this should really be divided into two distinct

hypotheses:

Ai.   Arabic uses repetition structure more than English.

Aii. The unmarked semantic relation in Arabic is the
      matching relation, while the unmarked semantic
      relation in English is the logical sequence rela-
      tion.

This is really a new formulation of what Kaplan is saying in
a way that is more manageable in linguistic terms. What it means
is that in Arabic, unless there is any signal to the contrary, the
relationship between clauses will be one of similarity, contrast,
or paraphrase. Where this type of semantic relation cannot be
maintained, one would expect some repetition of formal structure.
In English the position is reversed. Unless there is a signal to
the contrary, the relationship between clauses will be one of tem-
poral or logical sequence. The formal correlate of this is that
repetition of structure at either clause or group level, or lexi-
cal repetition at word level, is regarded as ornamental and to be
avoided unless absolutely necessary.

B.   Arabic is written to be spoken whereas English is written
      to be read.

This evaluation of the nature of Arabic writing was first
expressed to me in 1984 in a letter from Dr M. Carter. It is also
expressed by Monteil (Monteil 1960:p.269): "L'arabe est voue a
l'insistance, a l'inlassable repetition, ou la tradition voit
toujours un profit. Il est fait pour l'oreille, pour la diction,
la poesie, la recitation, l'orthoepie, la lecture a haute voix,

l'eloquence, la conference, le theatre, la radio. Celle-ci, comme

les discours politiques, ne peut que le maintenir dans cette voie.

Au fond l'arabe 'ecrit', c'est surtout une langue orale". Left

like that, it is very difficult to validate linguistically. What

is needed is some definition of the characteristics of speech that

has formal linguistic expression. The fullest formulation of

these characteristics that I have come across is that found in Ong

1982. The characteristics that may find formal expression in lan-

guage are listed below.

> Bi.   Speech is "additive rather than subordinative" (Ong
>   1982, p.37).

Ong illustrates this by contrasting two versions of the first

five verses of the book of Genesis. The first is from the Douay

Version and is heavily influenced by the Hebrew original, whereas

the second is from the New American Bible and reflects contempo-

rary usage.

> 1. "In the beginning God created heaven and earth.
> And the earth was void and empty, and darkness was
> upon the face of the deep; and the spirit of God moved
> over the waters. And God said: Be light made. And
> light was made. And God saw the light that it was
> good; and he divided the light from the darkness. And
> he called the light Day, and the darkness Night; and
> there was evening and there was morning one day."
> (Douay Version, 1610)

> 2. "In the beginning, when God created the heavens
> and the earth, the earth was a formless wasteland, and
> darkness covered the abyss, while a mighty wind swept
> over the waters. Then God said, 'Let there be light',
> and there was light. God saw how good the light was.
> God then separated the light from the darkness. God
> called the light 'day' and the darkness he called
> 'night'. Thus evening came, and morning followed -
> the first day." (New American Bible 1970)

No subordinators are to be found in the first version, and,
following the Hebrew, there is only one general purpose coordina-
tor, "and". In the second version, there are two subordinating
conjunctions ('when' and 'while'), and three discourse adjuncts
('then', 'then' and 'thus').

Bii.   Speech is "aggregative rather than analytic" (op. cit.
         p.38).

This implies that certain phrases will be repeated as wholes
far more than is customary in a more literary language. Thus
instead of talking about the 'oak', one talks about the 'sturdy
oak'; instead of 'Nestor', it is 'wise Nestor' etc. The epithets
are redundant but nevertheless are not omitted.

Biii.   Speech contains much that is "redundant and copious"
         (op. cit. p.39).

One may therefore expect to find a great deal of lexical
repetition.

Biv.   Speech is "close to the human lifeworld" (op. cit.
         p.42.).

Ong argues that this is evidenced by embedding lists and
other abstract information in a context of action and human rela-
tions.

Bv.   Speech is "agonistically tuned" (op. cit. p.43)

That is to say, the practice of name-calling and engaging

others in verbal and intellectual combat through the use of prov-
erbs and rhymes is far more common in an oral culture than a lit-
erary culture. A literary culture seems to prefer the use of syl-
logistic arguments. In linguistic terms this means that the
writer proves his assertions not by summoning up all sorts of log-
ical arguments but by presenting them repeatedly and beautifully
and regarding them from different points of view. It would also
tend to imply that greater prominence is given to both addresser
and addressee. The same point is made by Chafe (Chafe 1985,
pp.116 ff.) using the term 'involvement focus'.

Bvi.   Speech is "empathetic and participatory rather than
        objectively distanced" (op. cit. p.45).

That is to say, the knower is not much separated from the
known. Linguistically, this would seem to imply greater intrusion
of the speaker into the text, and connected with this, a greater
use of expressions of modality.

Bvii.   Speech is "homeostatic" (op. cit. p.46).

Ong means by this that an oral society has a large variety of
lexemes covering the immediate needs and environment of the commu-
nity. Such a society "keeps itself in equilibrium by sloughing off
memories which no longer have present relevance" (op. cit. p.46).
This happens because far more than is the case in literate cul-
tures, the meaning of a word is determined by its context and dis-
appears as soon as that context disappears; for there is no repo-
sitory such as a dictionary where it can be kept to be resurrected

at a later date.

Bviii.   Speech is "situational rather than abstract" (op.
          cit. p.49).

This would seem to suggest a thematic development that is
based on situational factors rather than on the logical categories
characteristic of thematic development in a literary culture. The
resultant difficulties in communication are forcefully expressed
by Goldsmith (Goldsmith 1982) in the following passage:

> "As Europeans we have been taught to develop an argu-
> ment in a logical manner, in which one point leads to
> another and relates to it in a neat sequence. In dis-
> cussions with arabs who have not been unduly influ-
> enced by Western educational patterns we may find that
> this does not work. We may be distressed to find that
> the arab suddenly flies off on a tangent in his think-
> ing, switching the conversation to something quite
> unrelated to what we were trying to prove. Some word
> or idea in what we were saying gives rise in his mind
> to a totally different thought and subject. The two
> different thoughts may be connected by some expression
> like "that reminds me that ...." or "your use of that
> word makes me think of ....". Thus, for example, the
> European may argue logically that since A+B=C, there-
> fore 2(A+B)=2C, or B=C-A. But others might develop a
> different line of logic, e.g. A+B=C; I went for a walk
> in the moonlight; black is a nice colour, but not for
> clothes; my wife has a new blue dress; owing to infla-
> tion life is expensive; inflation leads to unemploy-
> ment. The key to this latter chain of logic is that
> the shape of the letter C reminds us of a moon and it
> is therefore logical to proceed from the mathematical
> formula to the thought about a moonlight walk. A walk
> in the moonlight reminds us of darkness and so of the
> colour black. The sequence of thought is totally log-
> ical and natural, but may frustrate anyone wishing to
> tell more fully about the formula A+B=C." (Goldsmith
> 1982, pp.131-2)

It is rather exaggerated, even laughably so, but it does
illustrate the point. The strangeness of it is due to the fact
that the successive themes are all connected through homonymy

rather than through co-occurrence in situation. An interesting question to ask at this point is: "How, if Arabic displays this tendency, does it maintain its coherence?".

To summarize from this list, one would expect the following list of linguistic characteristics to be present in a language that is still largely oral in orientation:

i.   A preference for coordination rather than subordination.

ii.   Repetition of lexical strings, particularly word groups of the structure modifier-thing.

iii.   Much repetition of lexis and structure.

iv.   Lists etc. embedded in narrative structures rather than in purely expository texts.

v.   Much intrusion of both addresser and addressee into the text.

vi.   Much use of modality.

vii.   A thematic development that is based on referential proximity rather than on elaborate metathemes.

It is the aim of this research to investigate whether these qualities as well as others characterize Arabic to an extent that is significantly greater than is the case for English.

CHAPTER TWO

LITERATURE SURVEY

2. Lay-out of Chapter.

As stated in the previous chapter, I shall be working with a systemic-functional model of language based on the work of M.A.K. Halliday. The advantage of the systemic model is that because it takes a basically paradigmatic approach to language, it is almost tailor-made for research in contrastive linguistics. Firstly, it provides a framework for the contrastive analysis of whole systems of language and not just isolated fragments, an important consideration as one oft-heard criticism of contrastive studies is that they contrast the parts (e.g. units, structures or classes) without reference to the whole. Secondly, later Hallidayan models provide a framework within which linguistic choices can be related to culture of which the language is an expression. Thirdly, the paradigmatic approach is ideally suited to the introduction of probabilistic rules of the sort one is forced to work with in any attempt to analyze grammar/style above the sentence level. A brief description of the systemic model is therefore given in Section 2.1 below.

The functional label is suitable because this approach provides a framework for examining the text-forming aspects of

language without getting involved in psycho-linguistics. A
description of Halliday's functional approach is therefore pro-
vided in Section 2, together with a brief survey of the background
against which this approach should be understood. Of the three
functional components (to use Halliday's terminology) - the idea-
tional, the interpersonal and the textual - I shall be mainly con-
cerned with the textual component. This will therefore be dis-
cussed in greater detail in Section 3. The textual component
contains both phonetic and structural elements. As the subject of
this thesis is written texts, we will be primarily concerned with
the structural elements, specifically 'cohesion' and 'Theme-
Rheme'. These two aspects of the textual component are therefore
discussed in separate sub-sections.

2.1. Systemic Grammar

Systemic Grammar was developed by M.A.K. Halliday and has its
roots in Firth's polysystemic approach to language. In the clas-
sical model, which was originally known as 'Scale and Category
Grammar' (Halliday 1961) but which gradually became known as 'Sys-
temic Grammar' as the category of 'system' grew in importance,
four categories were proposed: 'unit', 'class', 'structure' and
'system'. Four units were posited - 'clause', 'group', 'word' and
'morpheme' - which were related to each other in descending order
on a scale of 'rank'. Each unit except the smallest has a certain
structure (e.g. clause: SPCA) and each element of structure is
filled by a certain class of the unit next below. Thus the sub-

ject (S) 'place' (1) is filled by a nominal group, the predicator

place (P) by a verbal group, the complement slot (C) by a nominal

or prepositional group etc. Structure thus represents the syntag-

matic axis, while system represents the paradigmatic axis. Units

can be classified and sub-classified according to the elements of

structure that are present and the order in which they occur. The

degree of classification that is carried out can be more or less

'delicate' according to one's needs - thus a second scale is

established, that of 'delicacy'. A third scale, that of 'expo-

nence' or 'realization', is the scale by which a choice in a sys-

tem on one level of language is said to be 'realized' by a certain

feature in the level of language below. Thus an element of struc-

ture is realized by a certain class and each class is realized by

a certain item etc.

As Systemic Grammar developed, the categories of 'system' and

'structure' became more and more prominent, as did the scales of

'delicacy' and 'exponence' (or, as we shall call it in future 're-

alization'). Through choices made in each system, features came

to be attributed more and more directly to elements of structure

having functional labels.

As we shall be making some use of the concepts of system,

structure and realization in this research, an example of how

these aspects of the model work will be helpful at this point.

Take the sentence:

                    ----

(1) This is Berry's term (Berry 1975, p.65), presumably the same
in meaning as the term 'slot' in Tagmemic Grammar.

The old man opened the shop early.

It consists of the following elements of structure:

```
        S           P           C           A
        |           |           |           |
   The old man    opened    the shop      early
```

The element of structure 'S' is realized by a nominal group con-
sisting of 'deictic.epithet.thing' (using Halliday 1985 terminol-
ogy). The element of structure 'P' is realized by a verbal group
consisting of 'Finite/Event'. The element of structure 'C' is
realized by a nominal group consisting of 'deictic.thing', and the
element 'A' by an adverbial group consisting of an adverb.

Figure 2.1 is taken from Berry 1975 (p.189) and illustrates
the transitivity network, which falls within the ideational compo-
nent (see Section 2.2 for a discussion of the functional compo-
nents). Our sentence has selected the following features from
this network:

```
    Features        |    Realization Rule   (1)
--------------------|------------------------------------
major               |    insert P
material process    |    classify vg material process
unrest. process     |    classify vg unrest. process
causative           |    insert goal
active              |    conflate subject actor
action process      |    classify vg action process
typical animacy     |    preselect subject animate
```

----

(1) These operands are taken from Mann & Matthiessen 1985, with
the modification that Berry's distinction between 'include' and
'insert' is maintained. See Preface p.xi for definitions.
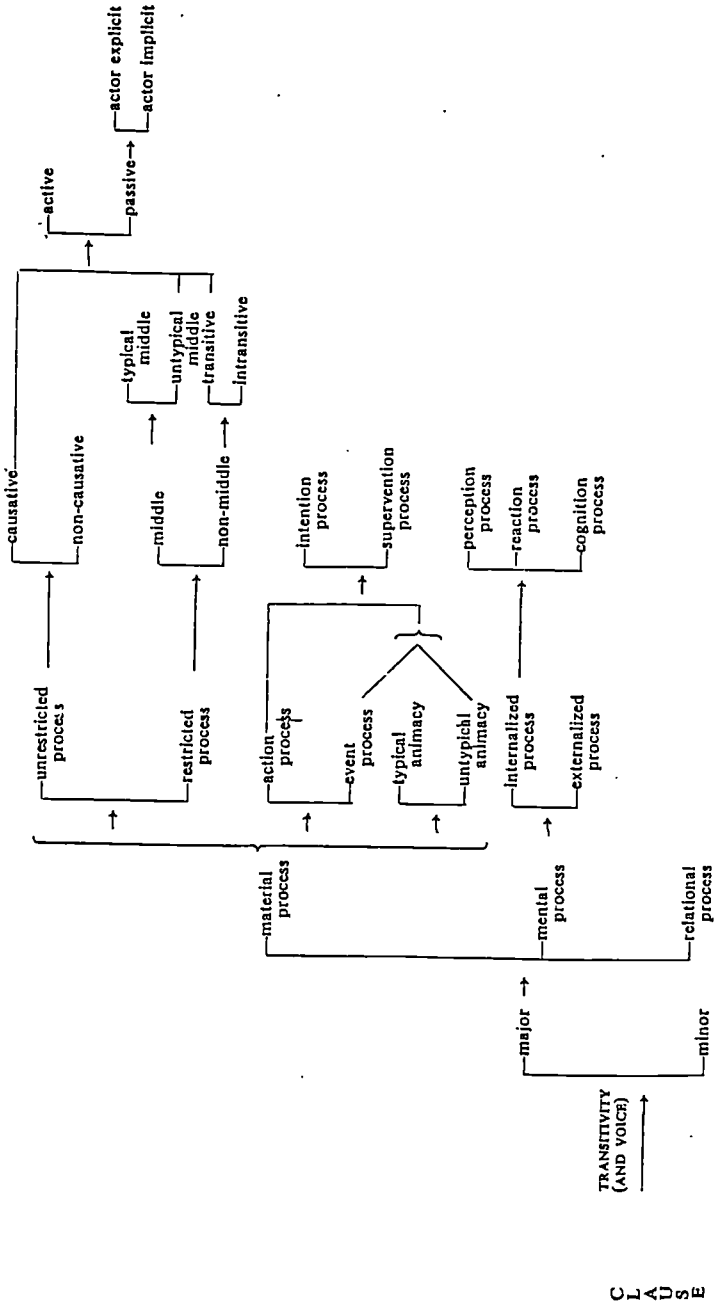
FIGURE 2.1

The Transitivity Network, as proposed
in Berry 1975

A possible network for mood (falling within the interpersonal component is shown in Figure 2.2. It is taken from Kress 1976 p.125. Our sentence has selected the following features:

```
    Features          |       Realization Rule
------------------|-----------------------------------
    finite            |     insert finite
    indicative        |     insert subject
    declarative       |     partition subject finite
    non-modal         |        ---
```

A possible network for theme (falling within the textual component) is shown in Figure 2.3. It is taken from Butler 1985 p.43. Our sentence has selected the following features:

```
    Features          |       Realization Rule
------------------|-----------------------------------
unpredicated          |
        theme         |     orderatfront theme
subject theme         |     conflate subject/theme
real theme            |        ---
```

The systems described above are given purely for exemplification and clarification and I do not necessarily agree with every aspect of them.

Systems can be developed to varying degrees of delicacy as appropriate to the research undertaken. Equivalent systems exist for the nominal group, the verbal group and the adverbial group, but these will not be discussed here.
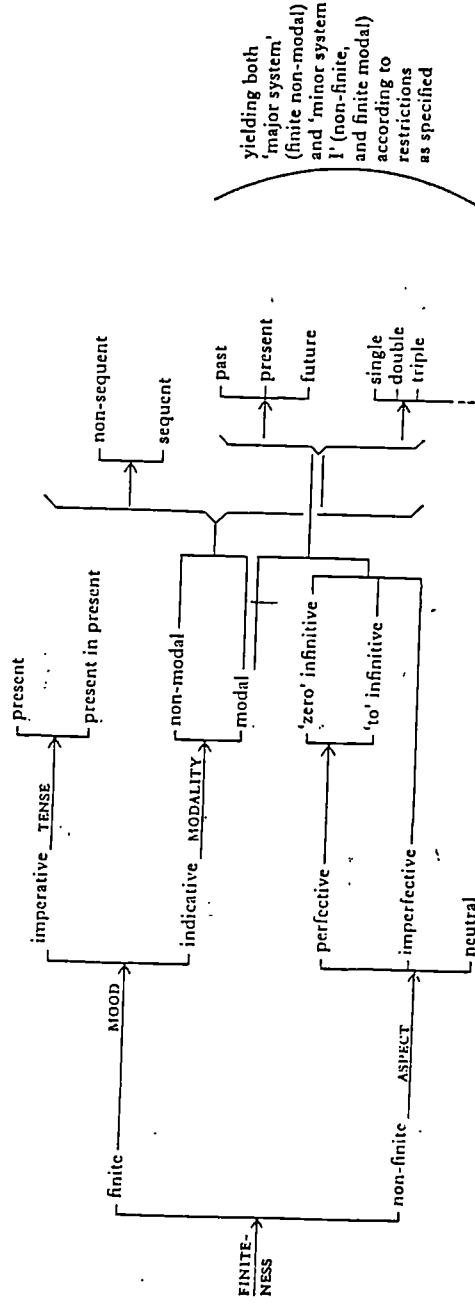
FIGURE 2.2

The Mood and Aspect Networks, as found
in Kress 1976
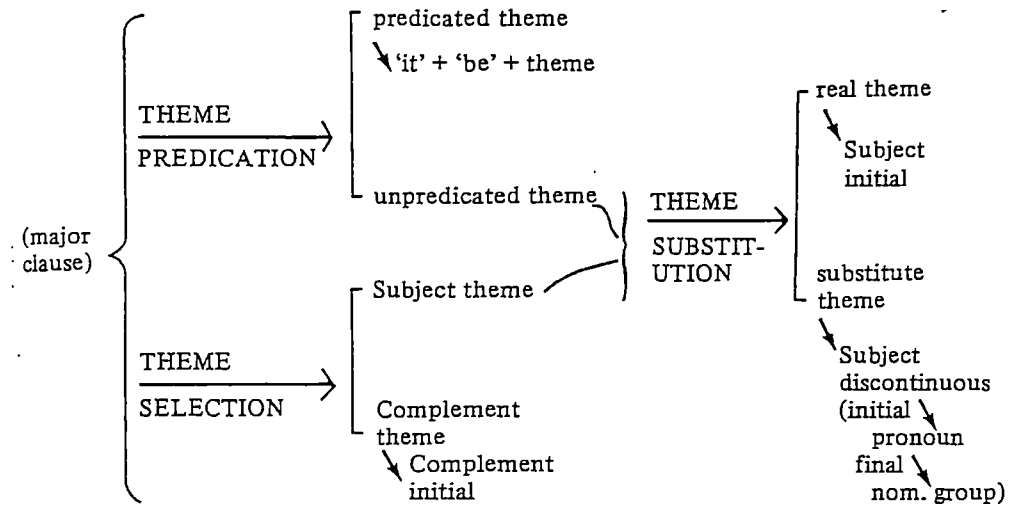
FIGURE 2.3

The Theme Network, as found
in Butler 1985

2.2. Functional Grammar.

In Section 2.1 we accounted for the Systemic part of Halliday's approach. It is now time to deal with the Functional part. Halliday takes a Firthian approach to situation and a basically Praguian approach to Functions. Since it is fundamental to Halliday's understanding and treatment of functions, offers a useful corrective to Halliday's approach to theme and rheme, and is the ground from which FSP sprang, we shall therefore spend some time now looking at the Prague School.

2.2.1. Background. The Prague School.

The most well-known exponents of the functional approach, at least until recently, have been the members of the Prague School, which can be dated from the first meeting of the Cercle Linguistique de Prague on October 6th, 1926. Mathesius, one of the founders of the Prague School, sees the roots of this school in three strands of nineteenth century linguistics. One is the neogrammarian school, which developed precise and accurate methods of analytical procedure but failed to appreciate the structural character of language and therefore concentrated in atomistic fashion on the diachronic aspect of language. This school also depended too heavily on the written language approached exclusively from the point of view of the reader.

The second strand was that initiated by the German scholar Wilhelm von Humboldt (1767-1835). He compared languages irrespective of their genetic relationship, and concentrated on the synchronic aspect. However, he emphasized that language was an

'energeia' (a creative process) rather than an 'ergon' (a ready product). Although this approach has in recent years led to much fruitful work, in this case it led von Humboldt to focus too much on actual isolated utterances rather than on language as a system. According to this school of thought, differences between languages were explained as being due to differences in the national psyches of the people using these languages, thus transferring the problems involved in comparing languages to another discipline and obviating the need to develop exact methods of analytical procedure.

The third strand was the nineteenth-century development of the science of phonetics. It concentrated on the synchronic aspect of language, but hardly ever arrived at the conception of a system, although some outstanding phoneticians (e.g. Otto Jespersen 1860-1943) arrived early at the concept of function.

It is interesting that Mathesius does not mention Saussure. However, as the 'emic' nature of language is not in focus here, the omission is perhaps understandable.

The distinctive method of the Prague School emerged out of the above trends as follows. It shared the interest in synchronic study characteristic of the second and third strands mentioned above, emphasizing that the synchronic study of language was as important and worthwhile as the historical study. However, it differed from previous approaches in that it approached language on principle from the functional aspect. Secondly, it viewed language as a system. As Mathesius said:

"Language can be used as a means of communication only
because it forms a system of signs which are interre-
lated and balanced in a certain manner. If this sys-
tem is disturbed, a new equilibrium is achieved
through the workings of the language itself." (Mathe-
sius 1975 p.12).

In this it is similar to the first and second strands rather than

the third.

When compared with other contemporary schools of linguistics, the

Prague School displays the following distinctive characteristics:

i.   They recognized no dichotomy between the diachronic and

        synchronic aspects. To reconcile these two aspects,

        Jakobson suggested that many of the changes which take

        place in language have a therapeutic character, new

        demands or changes in one part of the system giving

        rise to tensions or confusions in another part of the

        system and so on ad infinitum.

ii.   A language system consists of a solid central core plus

        a periphery of less stable elements, which, as Vachek

        (Vachek 1966 p.27) says, "need not be in complete

        accordance with the laws and tendencies governing its

        central core".

iii.   A language is best characterized as a system of systems

        rather than as one totally balanced system.

iv.   While not denying the existence of different language

        levels each with their own set of problems, the Pragui-

        ans oppose the view that "a separation of levels is a

necessary prerequisite of a scientific approach to the

facts of language" (Vachek 1966 p.29).

v.   While opposed to the introduction into linguistics of

psychological methods, the Prague group are not opposed

to the use of intuition (i.e. the native speaker's lin-

guistic consciousness) "as a means of control that can

be used in checking the validity of the results arrived

at by the analysis" (Vachek 1966 p.30).

vi.   The relationship between the phonic sign (signifiant)

and the content (signifie) is always found to be of a

somewhat gliding nature. "In fact, there is always a

kind of tension between the two. The sign tends to

have other functions besides the one involved in a par-

ticular context; the content (signifie) is capable of

being expressed by other means than the primary sign.

Thus, the two are found to be asymmetrical; they are in

a state of unstable balance . ... It is exactly this

asymmetrical dualism of the structure of the sign that

makes it possible for language to develop at all: the

'adequate' position of the sign always becomes shifted

as a consequence of its adjustment to the needs of the

concrete situation." (Vachek 1966 p.31, quoting as

representative of the Prague School the views of Kar-

cevskiy).

2.2.2. The Prague School Approach to Linguistic Functions.

However, it is above all their emphasis on the function of

language that distinguishes the Prague School. In the words of
Geoffrey Sampson (1980), "the hallmark of Prague linguistics was
that it saw language in terms of function. They analyzed a given
language with a view to showing the respective functions played by
the various structural components in the use of the entire lan-
guage."

Their approach to functions is chararacterized by three spe-
cial features:

   i.   They generally favoured three functions.

   ii.   They tended to agree broadly on the definitions of
         these functions although they were often subdivided.

   iii. They tended to see these functions operating on concep-
         tual clusters in a certain order.

To illustrate these characteristics I present the following
description of some of their models.

Buhler and Trubetskoy worked in terms of three functions and
these are illustrated by a diagram from Buhler's book 'Sprachtheo-
rie' (Vienna 1934) which is reproduced in Figure 2.4.

Vachek describes the 'Darstellungsfunktion' as informing of
the factual, objective content of extralingual reality and it
could be translated in English as the 'reference function'.
'Kundgabefunktion' can be translated as the 'expressive function'
and includes all those individual peculiarities of speech that
distinguish the speaker from other members of the community (e.g.
his personal speed and rhythm of speech, his predilections towards

```
                        _____
                       |        |
                       |object |
                       |_____|
                           |
                           | Darstellungsfunktion
  _____      _____   _|__              _____
 |        |    |         \sign/       |     |        |
 |speaker | Kundgabe- \   /  Appel-   |hearer |
 |_____| funktion   \/  funktion   |_____|
```
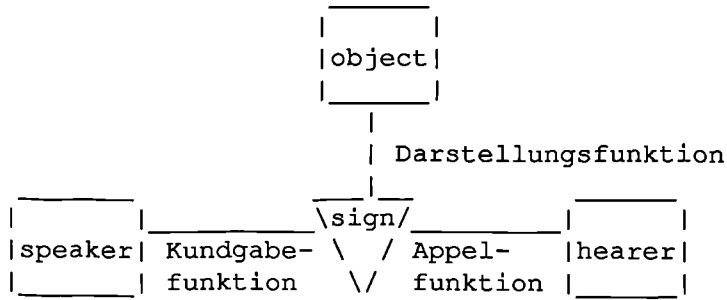
Figure 2.4.

particular words and phrases, sentence structures etc.). 'Appel-

funktion' can be translated as the 'appeal function' and refers to

the effect an utterance has on its hearer.

Mathesius seems to work within the framework of the same

three functions but does not define them clearly with reference to

one another, perhaps because he sees the expressive function and

the appeal function as applying to the utterance, while the refer-

ence function refers to an earlier stage of linguistic encoding,

the selection of elements/units of experience to talk about from

the context of situation. A diagram illustrating his model is

reproduced in Figure 2.5. This is how he describes the expressive

and the appeal functions, the latter of which he calls the com-

municative function:

> "Speech has two functions, i.e. it can operate as a
> means of expression or of communication. Expression
> is spontaneous manifestation of one's emotions; it
> does not reckon, or is not meant to reckon, with the
> hearer. It is an act of expression for the sake of
> expression, of a purely subjective kind. On the other
> hand communication has a social character; it applies
> to another speaker as the hearer, being intended to
> evoke certain thoughts, ideas, decisions, etc."
> (Mathesius 1975 pp.13-14)

the content of thought

the intention to express   it by means of language

encoding

the intention to express   it

in writing   by speech

written utterance   spoken utterance

read utterance   heard utterance

decoding

comprehension of the content

writer

speaker

reader

hearer
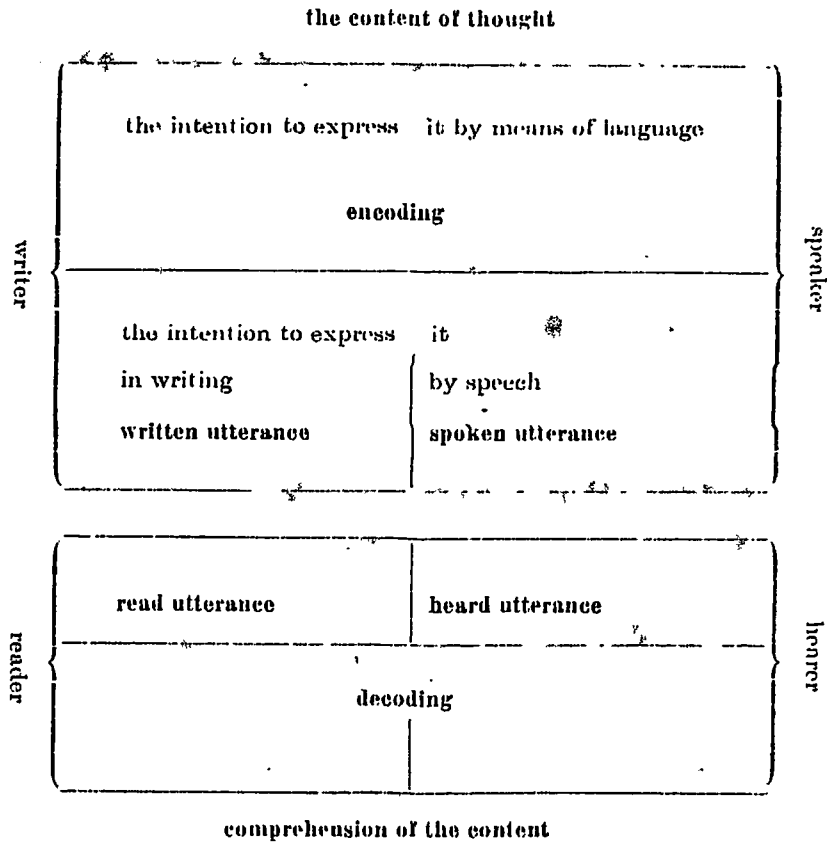
FIGURE 2. 5

Mathesius' Model of the Processes
of Language Encoding and Decoding

Danes, again, argues for a three-level approach to syntax,
with a level of grammatical structure, a level of semantic struc-
ture and a level of the organization of utterance. The similar-
ity with Halliday's lexico-grammar is immediately apparent. On
the semantic level,

> "the sentence structure is based on that kind of rela-
> tions that is sometimes called 'logical'; these rela-
> tions are derived from nature and society and appear
> to be essential for the social activities of man, e.g.
> actor and action; the bearer of a quality or of a
> state and the state; action and an object resulting
> from the action or touched by it, etc.; different cir-
> cumstantial determinations (determ. of place, time
> ...); causal and final relations, relations of conse-
> quence, etc." (Danes 1964 p.226).

Danes goes on to argue for an autonomous grammatical level,
whose elements have varying degrees of affinity, but not identity,
with the respective semantic categories. Then he discusses the
level of 'organization of utterance':

> "The third level is that of the organization of utter-
> ance. To put it briefly, it makes it possible to
> understand how the semantic and the grammatical struc-
> tures function in the very act of communication, i.e.
> at the moment they are called upon to convey some
> extra-linguistic reality reflected by thought and are
> to appear in an adequate kind of perspective. The
> conditions of the act of communication are determined
> by the general character and regularities of the lin-
> ear materialization and linear perception of utterance
> on the one hand, and on the other by the attitude of
> the speaker towards the message and the addressee.

> "Thus into the domain of the organization of utterance
> pertains all that is connected with the processual
> aspect of utterance (in contrast to the abstract and
> static character of the other two levels), that is to
> say, the dynamism of the relations between the mean-
> ings of individual lexical items in the process of
> progressive accumulation, as well as the dynamism of
> all other elements of utterance (semantic and grammat-
> ical too), arising out of the semantic and formal

tension and of expectation in the linear progression
of the making-up of every utterance.

"Further, all extra-grammatical means of organizing
utterance as the minimal communicative unit are con-
tained on this level as well. Such means are: rhythm,
intonation (as a complex of 'melody' and 'stress'),
the order of words and of clauses, some lexical
devices, etc. (Still, some of them may be operative
on the grammatical level, too.)

"The framework for the dynamism of the utterance rep-
resents 'the functional perspective' in the strict
sense, i.e. the principle according to which elements
of an utterance follow each other according to the
amount (degree) of communicative dynamism they convey,
starting with the lowest and gradually passing on to
the highest. In this way, an utterance may usually be
divided into two portions: the theme (or topic), con-
veying the known (given) elements, and the rheme (or
comment), conveying the unknown (not given) elements
of an utterance. The same principle is operating even
in organizing the context." (Danes 1964 pp.227-228).

In this context, Danes postulates three levels of idealiza-
tion for the sentence:

   i.   Sentence as a singular and individual speech-event.

   ii.   Sentence as one of all possible different minimal com-

          municative units (utterances) of the given language

   iii.   Sentence as an abstract structure or configuration,

          i.e. as a pattern of distinctive features; the set of

          such patterns represents a subsystem of the overall

          grammatical system of the given language.

He calls the first concept the 'utterance event' (at this level

there is no idealization), the second the 'utterance' and the

third the 'sentence-pattern'.

   The great majority of utterances represent manifestations of

a small set of sentence-patterns and he calls such utterances

'sentences'. Let me quote what he says at this point:

"It is clear that the above three stages represent
three steps in the process of generalization. What
belongs to speech (la parole) and represents material
immediately accessible to our observation, are the
utterance-events. If we deprive such an event (by way
of abstraction) of all accidental, singular and indi-
vidual elements, connected with its phonic (or
graphic) 'ego, hic et nunc' manifestation, we arrive
at an utterance which no longer belongs to speech,
which, however, contains many more features than only
those belonging to the most abstract and general syn-
tactic pattern of the grammatical system: the utter-
ance remains a part of context and of situation, it
contains concrete lexical items, some elements of
modality (which are often *expressed by non-grammatical
means*, e.g. by means of lexical items or of intona-
tion), etc.

"Thus on the second step of generalization we arive at
the utterance. By analyzing it we discover: (1) Non-
grammatical, but systemic means of its organization,
such as mostly word-order in Slavic languages (as far
as it serves as a means of organizing the utterance
and context), intonation as a device of integration,
delimitation and segmentation of utterances, of empha-
sis and modality, etc. ... (2) On this step of gener-
alization we ascertain even some grammatical elements,
which, however, do not belong to the constitutive fea-
tures of a sentence pattern (e.g. mostly the use of
morphological categories, such as moods, tenses, or
even the grammatical agreement in an utterance that is
not based on an underlying sentence pattern).

"And, finally, only on the third, highest step of gen-
eralization is obtained the specific grammatical
device of the organization of utterance, viz. the sen-
tence pattern.

"... Under the term 'sentence-pattern' we understand
then, generally speaking, a syntactic structure of the
kind that it converts a sequence of words into a mini-
mal communicative unit (an utterance) even outside the
framework of connected discourse, i.e. even when it
has been taken out of its settings (the situation and
context). It is such a structure as is sufficient by
itself to signal a given sequence of words as utter-
ance. Thus from the viewpoint of function, the sen-
tence-pattern is a specifically communicative struc-
ture." (Danes 1964 pp.229-230).

It is difficult to know whether Danes is proposing some sort
of deep structure here or whether it is merely an exercise in
idealization.   It does, however, appear that the three levels of
syntax that Danes proposes operate at different degrees of
abstraction.   The semantic level would seem to operate at a more
abstract stage than the sentence pattern.   The grammatical level
operates at the stage of the sentence-pattern and the level of
organization of utterance operates at the stage of the utterance.
This is very similar to the model of Mathesius (see Mathesius
1975) who sees semantic encoding as operating prior to syntactic
encoding.

Svoboda (Svoboda 1968) sees the three levels as three systems
operating within the system of systems which constitutes language.
From his tabular arrangement of it (reproduced in Figure 2.6 below
from Svoboda 1968 p.56),   he appears to view the grammatical sys-
tem (presumably here the same as Halliday's 'logical' subcompo-
nent) as operating prior to the semantic system and to see a sys-
tem of onomatology and a system of syntax operating at every
level.   Moreover, he understands Danes' definition of the grammat-
ical level as implying that 'grammatical' means 'formal', 'de-
prived of semantic content', 'viewed from the purely formal stand-
point'.   As we shall see below, this point is taken up by
Halliday.

**2.2.3.   Halliday's Critique of Danes.   The Origin of Halliday's
            Three Components**

Halliday (Halliday 1974) offers an interesting critique of

GRAMMATICAL SYSTEM

system of morphology

words, morphemes

system of formal syntax

subject, predicate, object, etc.

SEMANTIC SYSTEM

system of onomatology

naming elements (elements
naming, or referring to,
some phenomenon of the
extra-linguistic reality)

system of semantic syntax

agent, action, patient, etc.

FUNCTIONAL SYSTEM

system of functional onomatology

naming elements represented by
words and morphemes in the very
act of communication

system of functional syntax

communicative units (to be
defined below)

FIGURE 2.6

Svoboda's Model
of Syntax

Danes' model. He identifies Danes' 'semantic level' with Buhler's

'representational' or 'reference' function and with his own exper-

iential function. He argues that Danes' level of grammatical

structure is rather odd. If it is purely formal, deprived of all

semantic content, "why should language have a level of structure

whose only function is to be a level of structure?" (Halliday 1974

p.46). He suggests that in fact this level is the equivalent of

Buhler's 'expressive' and 'appeal'/'conative' functions, which,

while distinguishable in psychology, are not distinguishable lin-

guistically. Insofar as it is at the grammatical level that "a

sequence of words is converted into a minimal communicative unit"

and it is through this conversion, this organization into clauses

that the speaker makes a choice of speech role (mood) and assesses

the validity of what he is saying (modality), this does not seem

to be an unjustifiable step. On the other hand, however, Danes

does say that the choice of modality and mood and tense (the last

two used in a formal sense somewhat differently from Halliday's

use of the terms) occur at the stage of the utterance whereas the

grammatical level operates at the stage of the sentence pattern.

However, the sentence in which Danes makes this latter assertion

is not clear (viz. "Only on the third, highest step of generaliza-

tion is obtained the specific grammatical device of the organiza-

tion of utterance, viz. the sentence-pattern." Danes 1964 p.230

quoted above); he seems to use the term 'organization of utter-

ance' in a sense completely different from that meant when he

refers to the 'level of the organization of utterance'. In short,

I do not think it is very clear what Danes means by the grammati-

cal level. However, if Halliday is right in identifying it with Buhler's 'expressive' and 'appeal'/'conative' functions, then it follows that the grammatical level is the same as Halliday's interpersonal component. Danes' third level, that of the organization of utterance, Halliday has no difficulty in identifying with his own textual component. Buhler has no equivalent as he is not primarily concerned with linguistics.

It is an open question whether Halliday is totally justified in identifying his functional components with Danes' three levels. However, it does seem to me that Halliday's approach to the functions of language is very much Praguian in origin. The number and division of functions are by his own admission similar to theirs. Moreover, the order in which he sees them operating also seems very similar to theirs (cf. Halliday 1974 pp.47-8, 1977 pp.178-9).

2.2.4. Halliday's Functional Components.

Halliday does not, however, as far as I have been able to discover, admit the Praguian connection. Instead, he justifies his functional components in three ways:

i.   They are based on the formal criterion of relative independence of systems.

ii.   They correspond to the Functions which language fulfils in society.

iii. They are realized by different types of structure.

The first of these criteria is discussed in Section 2.2.4.1., the second in Section 2.2.4.2., and the third in Section 2.2.4.3.

2.2.4.1. A Formal Criterion for the Functional Components.

As Halliday developed the various systems networks, he found that they fell into a number of relatively independent sets, and that each of these contributed in a different way to the meaning of the clause. As Halliday writes in Halliday 1973:

> "If we represent the language system ... as networks of interrelated options which define, as a whole, the resources for what the speaker wants to say, we find empirically that these options fall into a small number of fairly distinct sets. In the last resort, every option in language is related to every other; there are no completely independent choices. But the total network of meaning potential is actually composed of a number of smaller networks, each one highly complex in itself but related to the others in a way that is relatively simple: rather like an elaborate piece of circuitry made up of two or three complex blocks of wiring with fairly simple interconnections. Each of these blocks corresponds to one of the functions of language." (Halliday 1973 p.110)

As Hudson points out (Hudson 1974 p.7), this would seem to be a testable hypothesis: "Halliday's claim is an empirical one, and should be testable by writing optimal grammars for all languages, then seeing whether their rules (i.e. of systemic relationships) tend to fall into relatively independent sets and whether such sets, if there are any, reflect different functions of language". When the criterion is applied, however, any number of components can be adduced, depending on the delicacy used. This is forcibly argued in Fawcett 1980. Moreover, the independence of systems is very difficult to quantify and compare.

2.2.4.2. The Functions of Language in Society.

The formal criterion described above therefore appears to

have been supplemented if not superseded by consideration of another approach to the functions of language. Here, Halliday would appear to have followed in the steps of Firth and Malinowkski in emphasizing the importance of the 'context of situation', but, as argued above (cf. Section 2.2.3.), he seems also to have been influenced by the Prague School. But the sorts of function put forward by the Prague School did not have the formal basis outlined by Halliday above; rather they were the functions which language was called upon to serve in a particular society. Halliday took this over and adapted it to his view of language as a product of socialization. When a child is first learning to speak, the relationship between function and utterance is 1-to-1, and each function is fairly specialized; but as the child grows up the functions become more generalized and the relationship between function and utterance becomes more complex, a grammar being set up to map one onto the other. This attitude to function is set out in tabloid form in Halliday 1975 p.158, which I have reproduced as Figure 2.7.

As will be seen from Figure 2.7, Halliday enumerates three functional components, the ideational, the interpersonal and the textual; in his latest papers, however, he divides the ideational component more and more explicitly into two, the experiential and the logical. Halliday 1979 implicitly draws together the systemic and Praguian origins of his functional components. The ideational (experiential and logical) and interpersonal components are described, and then Halliday goes on to describe how the textual component serves to make the output of these two components

Phase I | Phase II [transitional] | Phase III

content—expression · content—form—expression

meaning potential as individual · social meaning potential

FUNCTIONS = USES · + grammar (including vocabulary)

+ dialogue

FUNCTIONS = GENERAL-IZED TYPE OF USE

[each utterance one function]

[functions coming to be combined]

(i) FUNCTIONS = ABSTRACT COMPONENTS OF GRAMMAR

[each utterance pluri-functional]

(ii) USES = SOCIAL CONTEXTS

[each utterance in some specific context of use]

(categorizable by reference to theories of cultural transmission and social learning)

interpersonal

... + textual

ideational [experiential]

Instrumental
Regulatory
Interactional
Personal
Heuristic
Imaginative
+ Informative

pragmatic

mathetic

FIGURE 2.7

The Developing Functions of Language
(from Halliday 1975 p.158)

The original developmental functions evolve, at one level, via generalized categories of meaning, into the abstract functional com-ponents of the linguistic system; and, at another level, into the social contexts of linguistic interaction.

relevant to "some real context".

> "All discourse involves an ongoing simultaneous selec-
> tion of meanings from both these components, which are
> mapped into a single output in the realization pro-
> cess. But there is also a third component, which we
> are calling the 'textual', whereby the meanings of the
> other two kinds take on relevance to some real con-
> text. Here the semantic system enables the speaker to
> structure meaning as text, organizing each element as
> a piece of information and relating it significantly
> to what has gone before. If the ideational component
> is language as reflection (the speaker as observer of
> reality), and the interpersonal component is language
> as action (the speaker as intruder in reality), the
> textual component is language as relevance (the
> speaker as relating to the portion of reality that
> constitutes the speech situation, the context within
> which meanings are being exchanged). The textual com-
> ponent provides what in modern jargon we might refer
> to as the ecology of the text." (Halliday 1979 p.60).

2.2.4.3. Realization by Different Types of Structure.

In the same paper, Halliday goes on to argue that "each of these semantic components typically generates a different kind of structural mechanism as its output, or realization; and that these different types of structure are non-arbitrarily related to the kinds of meaning they express". He says that the experiential meaning of a unit tends to be expressed through a configuration of discrete elements (i.e. elemental); the interpersonal meaning is strung throughout the clause "as a continuous motif or colouring" (i.e. prosodic), and that the text-forming systems find their expression in the unmarked case at the beginning and the end of the clause, the theme coming at the beginning and the climax of what is new, signalled by the tonic syllable, coming at the end (i.e culminative-periodic). To quote Halliday at greater length on the textual component:

> "The structures that realize options in the textual
> component are what we may call 'culminative' struc-
> tures. They are not configurations or clusters of
> elements such as we find in the ideational component;
> nor are they prosodic chains of the interpersonal
> kind. What the textual component does is to express
> the particular semantic status of elements in the dis-
> course by assigning them to the boundaries; this gives
> special significance to 'coming first' and 'coming
> last', and so marks off units of the message as
> extending from one peak of prominence to the next".
> (Halliday 1979, p.69)

Figure 2.8 below illustrates this in diagram form. Figure 2.9

gives a diagramatic analysis of a sentence, *showing the different*

levels of structure, and Figure 2.10 shows a tabloid analysis of

the same sentence.

On a note of caution, Halliday does point out that "this is a

structural description of English. The functional categories

themselves are universals; but the structural tendencies, though

clearly non-arbitrary, may differ very considerably from one lan-

guage to another".

Halliday also finds a systematic relationship between the

components of a situation and the functional components of the

semantic system.

> "It appears that, by and large, the field - the nature
> of the social activity - determines the ideational
> meanings; the tenor - the social statuses and roles of
> the participants in the situation - determines the
> interpersonal meanings; while the mode - the part
> assigned to the linguistic interaction in the total
> situation - determines the textual meanings". (Halli-
> day 1979, p.62)

(1) experiential: elemental

(2) interpersonal: prosodic

(3) textual: culminative-periodic
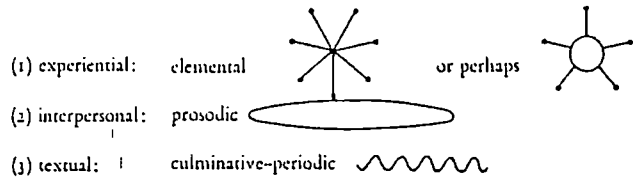
FIGURE 2.8

(1) *experiential: clause as representation (of process)*
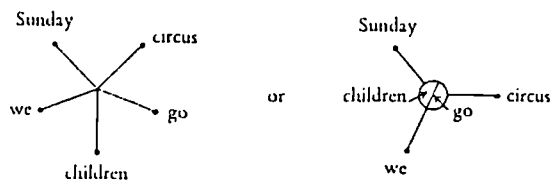
(2) *interpersonal: clause as interaction*
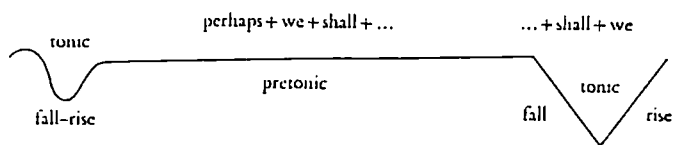
(3) *textual: clause as message*

FIGURE 2.9

on | Sunday ‖ perhaps ‖ we ‖ 'll | take | the children | to¹ the circus | shall | we

experiential:

| Loc: Time | Agent | Process | Medium | Loc: Place |

interpersonal:

Modality | Subject | Finite → | Mood

Key₁ Key₂

Finite | Subject
→ | Mood
Key₃

textual:

Theme₁ | Theme₂ | Theme₃
Theme

New₁ | New₂ → | New₃

‖ 4 ⌃ on / Sunday per ‖ 1 haps we'll / take the / children to the / circus ‖ 2 shall we ‖

Key to phonological (prosodic) notation:
‖ tone group boundary   / foot boundary   Bold   tonic prominence ('focus')
⌃ proclitic foot   1 falling tone   2 rising tone   4 fall-rise tone

FIGURE 2.10

2.2.5.   Conclusions concerning Halliday's Functional Approach to Language.   Its Place in This Research.

For the purposes of this research we shall not be concerned to establish the objective reality of Halliday's three functions. I shall however adopt them for the simple reason that they are a practical framework for analyzing different aspects of meaning and text structure.   A more rigorous assessment of these functional components may be important for psycholinguistics (which seems to be Fawcett's main concern) but it is beyond the scope of this research, and anyway the disagreement between Fawcett and Halliday and other systemicists can be treated as a question of delicacy (cf. Mann & Matthiessen 1985).   Moreover, as this research is concerned with text structure, I shall not discuss the ideational or interpersonal components further but shall turn my attention to the 'textual component', which is the subject of the next section.

2.3.   The Textual Component.

Halliday 1974 distinguishes the following types of relations within the textual component:

1.   relations of presupposition (i.e. reference, substitution, conjunction and lexical presupposition)

    a. verbal (i.e. anaphora and cataphora)   .

       i. between sentences (Halliday's 'cohesion')

      ii. within sentences

    b. situational (exophora), referring outside the text

2.   structural relations

    a. in syntactic units

       i. sentence and clause

ii. group and phrase

b. in communicative units

When dealing with textual cohesion, we are concerned with the
relations of presupposition described above. These will be dealt
with in more detail in the next section (Section 2.3.1.). When
dealing with textual development, we shall be concerned with
'structural relations'. Halliday distinguishes two systems at
work here. 'information structure', whose domain of operation is
the information unit or tone group, and 'thematization', whose
domain of operation is the clause. As I am dealing in this thesis
with written texts, I shall not be concerned with information
structure - at least not as Halliday understands it. Instead, I
want to focus on 'thematization'. According to Halliday 1967
(p.212) - and repeated in similar terms in Halliday 1985 (p.178) -
"the difference can perhaps be best summarized by the observation
that, while 'given' means 'what you were talking about' (or 'what
I was talking about before'), 'theme' means 'what I am talking
about' (or 'what I am talking about now')". Although, Halliday
says, there is in the unmarked case an association of the theme
with the given, the two are independent options. Having thus sepa-
rated the two systems, Halliday defines the theme as 'what comes
first in the clause'. In Halliday 1985, he is careful to say that
this is not a definition, but an observation based on English
practice. However, nowhere does he give an alternative defini-
tion.

I find this aspect of Halliday's work very unsatisfactory.

It is true that the study of the use of the sentence initial posi-
tion is an interesting area of study (cf. Newsham 1977 and Wil-
liams 1983). However, it is the interplay of theme-rheme struc-
ture and this sentence initial position that provides the real
source of interest. Moreover, the difference between the two
aspects 'given-new' and 'theme-rheme' mentioned above is probably
not as great as Halliday claims. First of all, as Danes argues in
Danes 1974, the distinction is an incomplete dichotomy because
although the first members of each pair are sometimes distinct,
the second members are always identical. Secondly, while it may
be true that the concept of givenness is very vague and also rela-
tive, Halliday's statement (Halliday 1967) that "thematization is
independent of what has gone before" is very doubtful. It seems
far more reasonable to agree with Hausenblas (Hausenblas 1969, as
quoted in translation in Danes 1974 p.112) that the theme "brings
what has been posited beforehand into the focus of the field of
vision and, at the same time, presents a foundation to be devel-
oped (elaborated) in the subsequent discourse". Danes (op. cit.)
argues that this statement clarifies two functions of the theme:
(1) the perspective function, consisting in hierarchical gradation
of thematic text components (and involving a static point of view,
regarding the text as a completed whole); (2) the prospective
function, in which the theme serves as a point of departure for
the further development of the semantic progression and, at the
same time, as a prospect or plan of this development.

Therefore, in Section 2.3.2, I give an account of Functional
Sentence Perspective. This account is very detailed because the

relevant literature is comparatively unknown and much misunder-
stood.

2.3.1. Cohesion.

The question of cohesion is dealt wih principally in Halliday
and Hasan 1976 and developed somewhat in Hasan 1979 and Hasan
1984. These will be the subject of of Section 2.3.1.1. Winter
deals with Vocabulary 3 items with cataphoric reference in Winter
1977. This will be discussed in Section 2.3.1.2. Winter also has
an important contribution to make with his observations about the
two basic types of clause relations, 'matching' and 'logical
sequence'. Apparently, however, he does not distinguish between
the semantic and the formal aspects of this question, and to rem-
edy this I will also describe here the work of B.J. Koch, the most
significant work on means of cohesion in Arabic I have so far dis-
covered. These will be discussed in Section 2.3.1.3.

2.3.1.1. Halliday and Hasan's Approach.

Halliday and Hasan 1976 is now very widely known, and there-
fore I do not propose to go into it in too much detail. They
argue that any reader can tell whether or not a series of sen-
tences constitute a text. This suggests that there are certain
objective factors involved, certain features which are character-
istic of texts but not of non-texts. Halliday and Hasan go on to
discuss these features under the following heads:

1. Reference. 2. Substitution. 3. Ellipsis. 4. Conjunc-
tion. 5. Lexical Cohesion.

In the discussion that follows, these headings will be

followed.

2.3.1.1.1. Reference.

There are certain items which are tied to their context. They indicate that their referent is somehow identifiable by reference to either the speech situation or to the preceding or succeeding text. Diagrammatically, the types of reference can be related as Figure 2.11.

```
                    Reference
                        |
        ---------------------------------
        |                               |
   (situational)                    (textual)
     exophora                       endophora
                                        |
                              ------------------
                              |                |
                        (to preceding    (to following
                             text)            text)
                          anaphora         cataphora
```
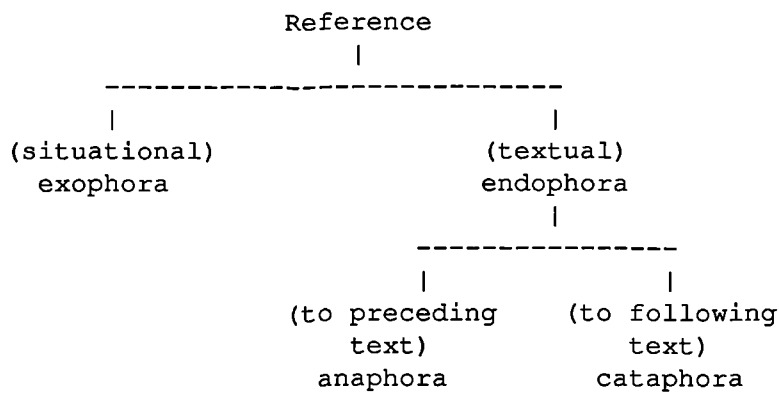
FIGURE 2.12.

Items included under this heading are pronouns, deictics, the definite article and comparatives.

The difficulties of this approach are dealt with by Brown and Yule (Brown and Yule 1983). Admittedly, Halliday and Hasan's use of the term 'reference' is a bit eccentric and in recent papers Hasan seems to have adopted the term 'coreference' instead. However, whereas Brown and Yule are concerned with text as process (op. cit. p.23ff.) Halliday and Hasan are concerned with text as product, just as my research is. Text can only be understood as

process when a sufficient number of texts of a particular type
have first been analyzed as products.

Brown and Yule's second objection is at first sight more
telling. They quote the example of the apples in the recipe:

"Wash and core six cooking apples. Put them into a fireproof
dish."

In this example, the exact referent of the pronoun changes as a
result of each successive process. Therefore, they argue, the
referent cannot be regarded as continuing to be 'apples' as
referred to in the first sentence. While this may strictly be
true, Brown and Yule would not argue, I presume, that there is
total discontinuity. There would be something strange about a
text which ran:

"Burn the leaves in an incinerator. Then spread them on the
lawn."

It would be more natural to replace the pronoun by 'the ash'
as the leaves have so lost their leafiness as to need redefining.
As they themselves observe, "the hearer/reader will not make a
tighter interpretation of the attributes of an object than is
required by the context". Moreover, the attributes the hearer/
reader regards as central to the intensional definition of a cer-
tain linguistic sign will be determined to some extent by the con-
text. For instance, in the context of cooking, the attribute of
flight will not be central to the definition of the linguistic
sign 'chicken'. In the example quoted above, the intensional def-
inition of the linguistic sign 'apples' is not 'fruit with a cer-
tain physical shape and colour' but 'fruit substance with a

certain flavour'. In other words, the problem is solved when
pragmatic considerations and the fuzziness of concepts is taken
into account. Moreover, although the pronoun is interpreted by
reference to the concept, the concept itself is activated by the
antecedent, which is readily identified. This neutralizes any
discrepancy between Halliday and Hasan's and Brown and Yule's
approaches when a text is being studied as a product.

2.3.1.1.2. Substitution.

As in the case of reference, items included under this head-
ing are context dependent. However, whereas reference is a rela-
tion of meaning, substitution is a relation of wording. Refer-
ence, or more properly coreference, is a semantic phenomenon;
substitution, including ellipsis, is grammatical.

Halliday and Hasan list three types of substitution: nominal,
verbal, and clausal. Examples of each are given below:

    i.   "Which shirt do you want?" - "I want the red <u>one</u>."

    ii.   "You wash the dishes. I'll <u>do</u> the pans."

    iii. "John loves sailing." - "<u>So do</u> I."

2.3.1.1.3. Ellipsis.

Ellipsis is really a special case of substitution, where the
lexical item is substituted by 0. As in the case of substitution,
Halliday and Hasan list three types: nominal, verbal, and clausal.
Examples of these are given below:

    i.   "John arrived on Sunday." - "And <u>0</u> went the next day."

ii.   "John cleaned the hen-house. David 0 the barn."

iii.   "Would you like some cake?" - "Yes, 0 please."

One modification seems in order. It is based on some obser-
vations found in Brown and Yule 1983 (pp.236ff). Whereas Halliday
and Hasan argue that the degree of ellipsis is determined by
structural incompleteness (cf. Halliday and Hasan 1976 pp.204-5),
in this book it is pointed out that ellipsis may be signalled by
the context. A slot entailed by a particular script or frame and
whose specification is germane to the context is left vacant to be
filled in by reference to the context. Pace Halliday, differences
in this area are important when comparing across languages.

2.3.1.1.4. Conjunction.

One of the most obvious ways in which cohesion is achieved is
through conjunction. Halliday and Hasan list the following types:
additive, adversative, causal, and temporal. As cohesion is con-
cerned with units above the sentence level, conjunctions are less
commonly found in this category than are discourse adjuncts. How-
ever, there is no reason why they should not be so included when
they do function to join different units.

What Halliday and Hasan did not pay any attention to, no
doubt because it was outside the scope of their work, is the slid-
ing nature of the relationship that exists between the linguistic
sign used and the semantic nature of the underlying clause rela-
tion. Two clauses are related because of their semantics irre-
spective of the conjunction that joins them, or the lack of one.
The conjunction can do no more than signal a preexisting clause

relation or highlight one element of a complex clause relation. It cannot in and by itself create such a relation. This is important because it gives the basis for an important cross-language measure, the degree to which clause relations are overtly signalled. It is also important as a source of the constantly sliding relationship between form and meaning.

2.3.1.1.5. Lexical Cohesion.

This is perhaps the central core of cohesion studies. In the 1976 model, Halliday and Hasan list the following types of lexical cohesion:

i. same item   iv. 'general' item

ii. synonym or near synonym   v. collocation

iii. superordinate

Halliday gives the following contrasting renderings of a sentence to illustrate these:

I turned to the ascent of the peak.

```
The ascent                        (Same item)
The climb                         (Synonym)
The task      was perfectly easy. (Superordinate)
The thing                         (General noun)
It                                (Reference item)
```

Collocation is achieved through 'the association of lexical items that regularly co-occur: e.g. order-obey, basement-roof, colonel-brigadier, street-town, garden-dig etc. As the reader will remark, this does tend to be rather a dustbin of categories, and it is rather vague.

In later work (Hasan 1984), Hasan has modified this model as follows. She lists the following types of general, i.e.

text-independent, lexical cohesion:

   i.   repetition   e.g. leave, leaving, left

   ii.   synonymy   e.g. leave, depart

   iii.   antonymy   e.g. leave, arrive

   iv.   hyponymy   e.g. travel, leave (including co-hypo-

                          nyms like leave , arrive

   v.   meronymy   e.g. hand, finger (including co-mero-

                          nyms like finger, thumb

She also lists the following three types of instantial, i.e. text-dependent, lexical cohesion:

   i.   equivalence e.g. the <u>sailor</u> was their <u>daddy</u>

   ii.   naming   e.g. they named the <u>dog</u> <u>Fluffy</u>

   iii.   semblance   e.g. the 10 <u>deck</u> was like a <u>pool</u>

The basic difference between the two lists is that the second list explicates the differences between 'similarity' and 'difference', and 'including' and 'included' which are subsumed respectively under 'synonymy' and 'superordinate' in the first. In addition, the category 'collocation' is dropped because of its vagueness.

In this paper, Hasan suggests that 'pay' is a meronym of 'buy', just as 'finger' is of 'hand' (op.cit. p.374). If this is accepted, then the way is open to include frames and schemas with the slots they provide regarded as the parts. The elaboration of such frames and schemas can be constrained by presuming that the reader/hearer will not make a tighter interpretation of attributes than is required by the text he is reading. Thus the frame

'house' will trigger 'roof' but not the material of which the roof

is made. Again, the frame 'house' will trigger only the minimum

of attributes to distinguish it from other lexical items in the

same semantic area. It is of course true that the context of

situation may cause other information to be triggered, but this is

not due to the basic frame.

Another addition to the 1976 model is the study of identity

chains (IC's) and similarity chains (SC's). Identity chains are

where there is total coreference; similarity chains where there is

coclassification (i.e. repetition of the same item) or coextension

(i.e. any other cohesive tie mentioned in the later model. She

suggests that the number and interplay of IC's and SC's are a use-

ful gauge of the coherence of a text, as well as the number of

tokens contained in such chains. Another useful measure suggested

is the degree of interaction of chains, as measured by examining

cases where IC's and SC's are in a constant semantic relationship

with each other on two or more occasions. Tokens which comprise

IC's or SC's are called relevant tokens (RT's) as opposed to those

which do not so comprise, which are called peripheral tokens

(PT's). That sub-set of the RT's which take part in 'interaction'

- that is to say, are in a constant logical or experiential rela-

tionship with one another in two or more sentences - are called

central tokens (CT's). Hasan suggests that:

> "The CT's of a text are directly relevant to the cohe-
> rent development of the topic of a text. Cohesive
> harmony consists not only in the formation of IC's and
> SC's but also in the creation of that additional
> source of unity which is provided by chain interac-
> tion. The degree of chain interaction is in direct
> correlation with the degree of coherence in a text, so

that it can be claimed that the greater the cohesive
harmony in a text, the greater the text's coherence.
We can express degrees of cohesive harmony by enquir-
ing what percentage of total tokens (TT's)act as CT's
in the text. It would appear also that the ratio of
PT's to CT's may be a significant factor, so that the
higher the ratio of CT's to PT's, the more coherent
the text would be." (ibid. p.216-7)

This leads on quite naturally to the subject of clause rela-

tions, which is the subject of Section 2.3.1.2.

2.3.1.2. Winter's and Koch's work on Clause Relations.

2.3.1.2.1. Winter's Work.

The Matching Relation and the Logical Sequence Relation.

The first question to be answered when dealing with clause

relations is: "What is a clause relation?". Winter gives three

helpful definitions:

i.   A clause relation is the cognitive process whereby we
       interpret the meaning of a sentence or group of sen-
       tences in the light of its adjoining sentence or group
       of sentences. (Winter 1971)

ii.   A clause relation is how we understand a sentence or a
       group of sentences in an adjoining context of another
       sentence or group of sentences. (Winter 1974, p.172)

iii.   A clause relation is the way in which the information
       of one clause is understood in the light of the infor-
       mation of the other clause. (Winter 1977, p.42)

It will be apparent from the second definition that Winter is

not using clause in the usual way. Instead, he uses it to refer to

a semantic unit comprising one or more non-'downgraded' - Leech's

term (Leech 1969) - propositions which enter into a relationship

with another semantic unit. It is equivalent to Quirk's term

'member' and Callow's term 'proposition'. It is defined exter-

nally and not internally. This approach is made explicit in

Winter 1982.

Winter's prime concern is with the function of repetition in text structure. He argues that there is much repetition in language but not all of it is significant. It only becomes significant when the repeated item or items are used as a head word in the same functional slot in successive sentences, and when these items produce a structure of repetition within which the replaced item will be understood and which determines the clause relation between the two sentences in question. Winter argues that there are fundamentally only two types of clause relation, the Matching Relation and the Logical Sequence Relation, and these can be defined by the function which repetition plays in the relation. If the repetition acts as a framework, then there is a Matching Relation; if the repetition acts as a base, then one has a Logical Sequence relation. At this point an example or two will help:

> (2.1) (1a) To Franklin Roosevelt and his advisors, the battle-
> ships at Hawaii were the great deterrent; (1b) to the Japanese
> they were the great target. (2) The Japanese therefore made
> bold plans for a surprise attack.

Clause (1a) and clause (1b) are in a matching relation with one another. This can be shown by attributing functional labels (Crystal and Davy 1969 pp.56-57) to the clause elements as in the figure at the top of the next page.

In this example, there is exact repetition of subject and verb - in the sense that ellipsis and substitution (including here substitution of pronouns) are all types of repetition. In the predi-

	A	S	V	P
	To Franklin Roosevelt and his advisors	the battle-ships at Hawaii	were	the great deterrent;
	to the Japanese	they	were	the great target.

cate there is one constant ('great') and one variable ('deter-rent'/'target'). In the adjunct there is also one constant and one variable, but the sentence needs rephrasing in order to make this apparent. It could be rephrased as follows:

'To the American leaders ...'

'to the Japanese leaders ...'

Here the constant is 'leaders' and the variable is 'Ameri-can'/'Japanese'. In Hasan's terms each of the elements are in a constant ideational/logical relationship with the other and thus qualify as CT's. Even those elements which are in contrast ('American'/'Japanese', 'deterrent'/'target') - each have a common semantic component ('nationality' and 'stimulus' respectively) and thus participate in similarity chains.

From this treatment it will be seen that clause (1b) is a partial repetition of clause (1a), and this partial repetition is made by Winter a criterion of the Matching Relation. Winter gives examples in Winter 1974 of a repetition structure characterized in turn by replacement of subject, verb, predicate and adjunct. Some made-up examples are given below (the replacements underlined are not necessarily the only ones):

Replacement of Subject.

(2.2) <u>French</u> is easy; <u>Chinese</u> is difficult.

Replacement of verb.

(2.3) I <u>think</u> in French; he only <u>speaks</u> it.

Replacement of predicate.

(2.4) I like <u>beef</u>; he likes <u>lamb</u>.

Replacement of adjunct.

(2.5) The bat sleeps <u>by</u> <u>day</u> and hunts <u>by</u> <u>night</u>.

It is also possible to have replacement by addition, and
replacement of the matrix clause, as illustrated in (2.6) and
(2.7) below:

(2.6) ... I thought I knew my prospective boss well enough to
provide a sound basis for working together. However, she took
just two years to reduce me to a state of nervous breakdown,
and she did this <u>by a combination of just those characteris-</u>
<u>tics which prejudice many of us against women at work</u>: <u>emo-</u>
<u>tionalism, capriciousness, selfishness and pettiness</u>. (Win-
ter's example - Winter 1979, p.105)

(2.7) ... They also believed that the wind of change which
was blowing in the rest of Africa, the attempted assassination
of Verwoerd, Sharpeville, the economic recession and the gen-
eral revulsion of world opinion would force the government's
hand. <u>It did</u> - in vastly more repressive measures and a mas-
sive increase in the police force and armed services. (Winter
1979, pp.109-110)

Returning to Example (2.1), Clauses 1 and 2 are in a Logical Sequence Relation. This is made explicit by the use of the discourse adjunct 'therefore'. To show the function of repetition in this relation, Example (2.1) could be paraphrased as follows:

(2.1a) Because to the Japanese the battleships at Hawaii were the great target, while to Franklin Roosevelt and his advisors they were the great deterrent, the Japanese made bold plans for a surprise attack.

In this case Clause 1 of Example (2.1a) is repeated in toto and made subordinate to Clause 2. It has become the diatheme, the base from which the communication of Clause 2 starts.

This, in Winter's view, is the essential difference between the Matching Relation and the Logical Sequence Relation. Of course, the repetition is not always as explicit as it is in the above examples and there is always the possibility of multiple relations. Where the relation between clauses is not made explicit in the text, it can be made so by inserting an appropriate sentence connector, or by attempting to paraphrase one sentence in the light of the other.

Examples of multiple relations follow in Examples (2.8-2.10) below:

(2.8) She fell silent at once; she didn't utter another word.

In this example, there is a logical sequence relation, made explicit by the insertion of the connector 'from then on':

(2.8a) She fell silent at once; from then on she didn't utter another word.

However, not only is there sequence in time; there is also compat-
ibility of detail, as indicated by the following paraphrase:

(2.8b) Not only did she fall silent at once but she didn't
utter another word either.

Another example is:

(2.9) As it is an experiment, the load factor is inevitably
uncertain; so, therefore, must be the cost of the electricity
from the prototype.

In this example, there is a logical sequence relation indicated by
the use of the connector 'therefore', and also a matching relation
indicated by the repetition framework 'so ... be ...'. However,
the classic example of a multiple relation is the concessive rela-
tion (discussed in Quirk 1954). Take, for example, the following:

(2.10) Although she is poor, she is happy.

To convey all elements of the relation between these two clauses,
it would have to be paraphrased as follows:

(2.10a) She is poor. Therefore, you would expect her to be
sad. However, she is not sad. She is happy.

Here is not the place to discuss this in detail. However, this
example contains a logical sequence relation, a matching relation
and an expectancy relation.

This brings us on to Winter's view of the function of the
coordinators 'and' and 'but'. He places them outside the realm of
clause relations, being a connection which can exist between
clauses in addition to the matching or logical sequence relation.
They indicate whether one state or event is expected or unexpected
in the light of the other.

Winter's work is very significant in showing how the use of repetition often signals the matching relation, and it does perhaps give us a means of measuring the extent of meaningful repetition. However, he does not appear to distinguish sufficiently between the linguistic levels of form and meaning. Although he devotes much space to the function of repetition in determining the type of clause relation - in fact his thesis is named "Replacement as a Function of Repetition" - it does seem to me that his criterion is a semantic one. Both the insertion of a connector and the use of questions are really *making explicit a* semantic relationship, and it is they that determine whether or not there is a repetition framework. This overlooks the possibility - which admittedly is immaterial from Winter's point of view - that some languages may value highly having a formal repetition framework whether or not there is, semantically speaking, a matching relation. A typical example of this is the creation story in Hebrew in the first chapter of Genesis. It is difficult to believe that there is any semantic matching relation; however, there is undoubtedly a formal repetition of structure. This will be taken up again in the context of Koch's work

The lexical signalling of clause relations.

One of the most interesting aspects of Winter's work is his treatment of the lexical signalling of clause relations (Winter 1977). He posits three types of lexico-grammatical items that function in this way: conjunctions, (Vocabulary 1), discourse and modal adjuncts (Vocabulary 2), and a third category which he calls Vocabulary 3. Vocabulary 3 items paraphrase items in Vocabularies

1 and 2 but in other ways function in the same way as other lexical items - adjectives, nouns, verbs, etc. To qualify as Vocabulary 3 items, they must have in a particular context "their proper functional significance as connectors of sentences" (Winter 1977,p.26) Moreover, the clause relations signalled by Vocabulary 3 items must be lexically realized in the succeeding context. Some sentences illustrating the use of Vocabulary 3 items are listed below:

(2.11)   The rifle clubs have banned the use of automatic and semi-automatic weapons. The _move_ _follows_ the police raids. (op.cit., p.10) - Temporal Sequence

(2.12)   One _condition_ for the success of the course is obvious. If the student likes the course, he will follow it with enthusiasm. (op.cit. p.21) - Condition/Result

(2.13)   May I indicate an _error_ in the photograph caption on page 72, of the 10 July issue? The Graf Zeppelin did not have apparatus for exhaust water recovery; the weight loss due to fuel consumption was minimized in the Graf by burning gaseous fuel only slightly more dense than air, and by using a rain water collection. (op.cit. p.21-22) - Denial/Correction

(2.14)   We are very _different_ in our attitudes towards office routine. Whereas I inhabit my office, he wears his like an ornament. (op.cit. p.25) - Signal sentence followed by contrast

All the words underlined in the examples above signal a clause relation.

Winter lists four criteria which items have to fulfil in

Winter lists four criteria which items have to fulfil in order to be included in Vocabulary 3:

i.   The items in Vocabulary 3 form a small and fairly stable vocabulary, the closed set vocabulary.

ii.   They are the characteristic items which complement the functions of Wh-items in questions, the characteristic lexical vocabulary of questions.

iii. Most of the items can paraphrase directly or indirectly the semantic ties of Vocabularies 1 and 2 - the paraphrase criterion.

iv.   They can anticipate the coming clause relation by their paraphrase semantics, anticipation being seen as the forward reference of the contextual function of lexical realization.

Criterion i. is not in fact a criterion but an observation whose truth can only be judged by the application of criteria ii.-iv. Criterion ii. refers to the possibility of Vocabulary 3 items being used to paraphrase Wh-items (e.g. 'at what time'='when', 'what means were used'='how') or to their being the characteristic vocabulary of questions which make explicit the clause relations signalled by Vocabulary 1 and 2 items. The most important are the third and fourth, the paraphrase and the signalling criteria. Vocabulary 3 items must be shown either to be capable of being paraphrased or to be signalling a clause relation to come. The paraphrase criterion can be illustrated by the following two examples, paraphrases of Examples 2.11 and 2.12 above:

(2.11a)   Since the police raided them, the rifle clubs have

banned the use of automatic and semi-automatic weapons.

(2.12a)   If the student likes the course, it will be success-

ful, for he will follow it with enthusiasm.

In Examples 2.13 and 2.14, no paraphrase is possible. Rather than

linking two clauses in a clause relation, they signal a relation

between two clauses still to come, in the first case that of Deni-

al/Correction and in the second that of Contrast. They set up an

expectation, in the same way that rhetorical questions do.

Winter himself implies that Vocabulary 3 is not totally

closed (Winter 1977 p.2) but is somewhere on the continuum (cline)

between open and closed. I would suggest that in addition to the

words Winter lists, all superordinate items realized in the imme-

diate environment of the word itself signal a clause relation and

are therefore candidates for this class. Perhaps this possibility

is implied by Winter's inclusion in Vocabulary 3 of the word 'ex-

emplify'. An example of what I am thinking of is the word 'books'

in (2.13 of Corpus A of my data):

(2.15)   I can remember now her books ... The poets she loved

best were Dante and Spenser. But she raved ... etc.

Superordinates do not, however, signal any other relation

apart from Generalization-Particulars, and they can only be

treated in this way when they have cataphoric reference. They

could perhaps be excluded from Winter's Vocabulary 3 by the addi-

tion of a fifth criterion of 'total abstractness' to Winter's

four. However, the degree of abstractness is best represented as

a cline and it will probably be more profitable for our purposes

to include superordinates as a sub-class within Vocabulary 3.

Modified in this way, the concept of Vocabulary 3 will be used in

my analysis of cohesion.

2.3.1.2.2. Koch's Work on Arabic. Formal Parallelism Divorced

from Semantic Parallelism.

Koch (Koch 1982) bases herself squarely on a Saussurean foun-

dation. The keystone of her approach is expressed in the follow-

ing few sentences:

> "In particular, there are two things about de Saus-
> sure's discussion which will be important in this dis-
> cussion and which need to be underlined again, even at
> the risk of repetition. The first is the elasticity
> of the associative axis of language. For de Saussure,
> associative relations are not simply relations of
> mutual substitutability, although they may include
> relations of this kind. Associative relations can be
> relations of semantic cognation or morphological or
> phonological similarity as well as relations based on
> similarity of syntactic function. The second key fea-
> ture of de Saussure's discussion is the dialectical
> interplay between the two axes of language in dis-
> course. This is the idea that syntagmatic and associ-
> ative relationships depend on one another in the flow
> of discourse". (Koch 1982, pp.16-17)

She argues that these two points are lost sight of by those

who followed de Saussure. The scope of paradigmatic relations was

reduced to those items which were mutually substitutable and the

dynamism of the relationship between syntagm and paradigm was lost

sight of as the synchronic study of language took over from the

diachronic. In Arabic, words frequently used paradigmatically in

a repeated frame will become paradigms of one another even when

originally they were not. What started as an instantial text-de-

pendent connection becomes a general text-independent connection.

Starting with Jakobson's description of parallelism as being
one of the characteristic features of the poetic use of language
she then goes on to describe a number of studies which show that
parallelism can be used as a discourse structuring device. This,
she comments, runs counter to the traditional western notion that
parallelism is a figure of speech, and hence ornamental rather
than intrinsic to the organization of the text.

In the course of her argument she makes the following obser-
vations about parallelism, which are very important in connection
with Winter's work on the 'matching relation':

> "Parallelism is always hierarchical; it always
> involves repetition on the higher level, and the evoc-
> ation and creation of paradigmatic structure on the
> lower level. To say that two linguistic structures
> are parallel is to say that they share a common struc-
> tural frame, and that within this frame, some element
> or elements differ in form. What is, on the face of
> it, most curious is that the elements that differ
> always stand in a close relationship to one another.
> They can be phonological, morphological, register or
> dialect variants, synonyms or antonyms, metaphorical
> versions of one another, or any of a number of other
> things. It is, in fact, very difficult to specify how
> the elements are related, although, especially in the
> case of dyadic couplets, considerable efforts have
> been made to do so. Most generally, they are members
> of the same linguistic subsystem, or paradigm. The
> two (or more) differing elements in repeated frames
> evoke the paradigm of which they are both (or all)
> members. And a crucial corollary of this observation
> is this: the fact that the differing elements in par-
> allel structures are members of the same paradigm is
> not accidental; parallelism is precisely the way para-
> digms are created. Elements which are members of the
> class of "things that differ in a repeated frame" are
> interpreted by readers and listeners as also being
> members of a common higher le vel class, or paradigm
> of some kind." (Koch 1982, pp.49-50)

Much of Koch's thesis is taken up with a detailed discussion
of the use of synonym couplets, root paradigms, and pattern

paradigms in Arabic.   These do not concern us here as they occur below the sentence level.   However, they do illustrate the dynamism of the process.   She argues that they are too central to the argument to be ornamental, and too common to be regarded as deviations from the norm.   They cannot therefore be regarded as figures of speech.

Moving on to repetition at clause level, she argues that there are two basic types.   Where there is repetition of content, paraphrase is used; presenting the ground of the argument, establishing the importance and pertinence of certain elements to the argument by the very fact of selecting them.   Thus the presentation is itself part of the argument.

The converse of paraphrase, the repetition of content, is parallelism, the repetition of form.   This type of repetition is frequently used to substantiate an argument, and a very good example of it is found in Passage B2 (c.f.   Appendix B).

Koch's thesis is that this use of repetition shows very clearly the dynamic use of parallelism to create new classes and to convince by weight of presentation rather than as a result of syllogistic or enthymematic 'logical' presentation.   I will return to this point in the concluding chapter of my thesis.   What concerns us here is Koch's analysis of the text-forming cohesive function of formal repetition.

2.3.2. Functional Sentence Perspective.

2.3.2.1. The Principle of Linear Modification.

FSP is based upon the assumption that as a unit of communication an utterance can usually be divided into two parts: the starting point of the utterance, which is defined by Mathesius (quoted in Danes 1974 p.106) as "that which is known or at least obvious in the given situation and from which the speaker proceeds"; and the core of the utterance, defined by Mathesius as "what the speaker states about or in regard to, the starting point of;the utterance". These two parts are variously referred to as the 'theme' and the 'rheme', 'topic' and 'comment' or 'given' and 'new'.

On the basis that in communication one usually proceeds from the known to the unknown, the objective order, so-called because it takes into account the needs of the hearer, is Theme-Rheme. The subjective order, that which a speaker might use when he is more concerned to express himself than to be understood, is Rheme-Theme. The objective order is referred to by Firbas et al. as the 'basic distribution of communicative dynamism', communicative dynamism (CD) being defined as "the extent to which the sentence element contributes to the development of the communication" (Firbas 1964 p.270). In these terms, the theme is defined as "the sentence element(s) carrying the lowest degree(s) of CD within the sentence" (Firbas 1964 p.272), which implies that sometimes the theme will not convey "known information or such as can be gathered from the verbal and situational context" (ibid.). An example of this would be the sentence "A certain king had three daughters"

coming at the beginning of a fairy story, where the phrase 'a cer-
tain king' would be the theme. The rheme comprises those elements
carrying the highest degrees of CD, and is itself split in two in
order to introduce the third element of the utterance, the 'tran-
sition', "ranking above theme on the one hand, and below rheme on
the other" (Firbas 1965 p.171).

As the degrees of CD represent a cline, the delicacy of seg-
mentation which one uses depends on the purpose of the analysis.
It is possible to divide the theme into: 'theme proper', defined
as the element of the thematic sphere which bears least CD;
'diatheme', the element of the thematic sphere which bears most
CD; and if necessary, theme proper oriented theme, an element
which would be the theme proper if there was not an element with a
stronger claim to it; and diatheme oriented theme, an element
which would be diatheme if there was not an element with a
stronger claim to it. The transition can be divided into: 'tran-
sition proper', the temporal and modal exponents of the verb
(TME's); and 'transition', the lexical part of the verb. Thirdly,
the rheme can be divided into: 'rheme proper', the element of the
clause bearing the highest degree of CD, and the rest of the
rheme.

At first sight it might be thought that the designation of a
theme or a rheme can only be done on a relative rather than an
absolute basis, and therefore there is no means of telling
whether, as one moves from sentence to sentence, the elements one
designates as themes or rhemes carry similar degrees of CD. This

is to some extent true, but fortunately any deviation is kept within limits by the fact that the predicatory element of the TME's, always occupying the position of transition proper, always carries the same degree of CD. This gives the analyst a stable reference point by which to judge the degrees of CD carried by the various elements.

CD, although semantic in nature, is carried by the clause constituents (SPCA) - as discussed in Section 2.1 above; as a whole they form a communicative field (CF) and individually they are sometimes called communicative units (CU) (cf. Svoboda 1968). Each communicative unit may itself form a communicative field, more usually termed a sub-field, of its own. Moreover, a communicative unit is still considered a bearer of CD even if, as frequently occurs in Arabic, its exponent is only one morpheme within a larger word.

2.3.2.2. Other Factors Affecting Word Order.

So far, we have considered FSP as the only principle affecting word order. However, Mathesius 1974 lists three others (pp.154 ff.). These will be discussed in the next three subsections.

2.3.2.2.1. The Grammatical Principle.

Inflected languages have a much freer word order than ones that are not inflected and therefore the FSP principle plays a very important role; Czech, Latin and Classical Greek are examples of these. English, on the other hand, is not an inflected language and has a very strict word order; so the grammatical

principle plays a more important role than FSP in determining word order. However, even English has a certain freedom in the movement of adverbials and a number of structures part of whose function is to satisfy the demands of FSP (e.g. the passive and the predicated theme). Moreover, in perhaps the majority of cases the grammatical word order of English, SVO, is in accord with the basic distribution of CD, Theme - Transition - Rheme. Arabic, by contrast, is somewhat freer to thematize any element it wishes, but its most common word order, VSO, is not in accord with the basic distribution of CD.

2.3.2.2.2. The Principle of Rhythm (cf. op cit. pp.155-6).

This principle accounts for phenomena like that of 'end weight' discussed by Quirk and Greenbaum (Quirk and Greenbaum 1973 p.410 ff.), and also the principle observed in Arabic that a mid clause break should not come later than half way through the clause (cf. Beeston 1970 p.108-110). It only operates within the constraints imposed by the grammatical and FSP principles and therefore need not delay us further.

2.3.2.2.3. The Principle of Emphasis.

Mathesius argues that the objective word order of Theme - Transition - Rheme is sometimes altered to emphasize a particular element or to give an emotional colouring to an utterance. (This latter use causes Firbas to prefer the term 'the word-order principle of emotion'.) Three examples from Mathesius are quoted in Mathesius 1975 (p.159):

(2.16) Right | you | are.   Rheme - Theme - Transition

(2.17)   Sorry | I | am | to speak of it in the presence of

your son.

Rheme - Theme - Transition - Rheme Proper

(2.18)   Colonel Lawrence gives us an account of his expedition

there and) a thrilling story | it | is.   (....) Rheme - Theme

- Transition

Although these examples show a certain emotional colouring

and a subjective word order to match, there are examples of utter-

ances having emotional colouring and the same grammatical deviance

as the above but which maintain an objective word order.   Firbas

(Firbas 1964) has culled the following from Mathesius' writings:

(2.19)   This lesson | time | will teach | to all alike.

Diatheme - Theme Proper - Transition - Rheme

(2.20)   These great men | we | trust | that we know how to

prize.

Diatheme - Theme Proper - Transition - Rheme

(2.21)   Hers | is | the meekness that belongs to the hopeless.

Theme - Transition - Rheme

(2.22)   Therefore | have | we | linked ourselves | to the only

Party that promises us the boon we seek.

Diatheme - Transition Proper - Theme Proper - Transition -

Rheme

(examples quoted from Firbas 1964 p.119 - my analysis)

Conversely, there are sentences of the following type which

show a subjective word-order but no emotional colouring:

(2.23)   A boy | came | into the room.   Rheme - Transition -

Theme.

Bearing these various examples in mind, I agree with Firbas (1964 p.119) that the true nature of the principle of emphasis/emotion lies not in a deviation from the objective word-order (the basic distribution of CD) of FSP but in a deviation from the grammatical word-order. This is in marked contrast to the Czech, where the principle of emphasis operates by means of contrast with FSP.

In concluding this section, let me summarize what we have observed about these three principles of word-order and their relationships with FSP and with one another. The only principle which seems to enter into a direct and equal relationship with FSP is the grammatical principle - and on the whole the grammatical principle in English works in unison with that of FSP (viz. the SVO word-order corresponding with the Theme - Transition - Rheme objective distribution of CD). The rhythmical principle operates within the constraints imposed by these two, and the principle of emphasis operates in English by means of contrast with the grammatical principle rather than by entering into a direct relationship with FSP, although in Arabic, where the word order is somewhat freer, it is quite possible that the principle of emphasis operates in a direct relationship with FSP.

2.3.2.3. Other Means of Implementing FSP.
2.3.2.3.1. The Effect of Semantics.

A semantic scale can be drawn reflecting in semantic terms the gradual rise in CD represented by the sequence Theme - Tran-

sition - Rheme. The clearest description of this can be found in Firbas 1975 and some further points are made, rather less clearly, in Firbas 1979. They are really two basic scales that can be combined to form one complex scale. Let me give a couple of sentences illustrating the two scales:

(2.24)   There | was | a little girl.   Scene - Appearance/Existence - Phenomenon Appearing/Existing.

(2.25)   She | had | a little curl.   Quality Bearer - Quality - Specification

These scales can be combined in the following way:

Scene - Appearance/Existence - Phenomenon Appearing/Existing// Quality Bearer - Quality - Specification - (Further Specifications)

Assuming that they are all context independent, this scale represents a continuous rise in CD. This can perhaps be better understood if one reflects that a phenomenon has first to be introduced onto the scene before it can become a quality bearer. Winter's discourse organizational sentences (cf. Section 2.3.1.2.1.) are probably best considered as being of the Scene - Appearance - Phenomenon type. His Vocabulary 3 items characteristically represent a phenomenon. The scale does not represent word-order, nor will all the elements necessarily appear in one example. Firbas 1975 gives examples of six opening sentence types demonstrating different realizations of this scale:

(2.26)   In the reign of the famous King Edward III, | there | was | a little boy called Dick Whittington, whose father and

mother died when he was very young.   Setting 12 - Setting

11 - Existence - Phenomenon (1)

(2.27) In Bamborough Castle once lived a king who had a fair

wife and two children, ...   Setting 12 - Setting 11 - Exis-

tence - Specification

(2.28)   A widow | had | two daughters ... Phenomenon//Quality

Bearer -   Quality - Specification

(2.29)   Dame Goody | was | a nurse that looked after sick peo-

ple, and minded babies.   Phenomenon//Quality Bearer - Qual-

ity - Specification

(2.30)   "The Nuts are quite ripe now," | said | Chanticleer |

to his wife Partlet.   Specification - Quality - Phenomenon//

Quality Bearer - Setting

(2.31)   One winter's evening | the sexton's wife | was sitting

| by the fireside ...   Setting - Phenomenon//Quality Bearer

- Quality - Specification

(2.32)   Did | you | ever hear | the story of the three poor

soldiers, who ... TME - Quality Bearer - Quality - Specifica-

tion

The first two of these examples contain explicit introduc-

tions onto the scene, and the introduction of 'widow' onto the

scene is indicated by the indefinite article.   The other three,

however, contain no such overt sign and the reader/hearer is thus

----

(1) The numbers here indicate the place of the element on the
scale of CD. The first digit 1 indicates 'theme', and the sec-
ond digit indicates the degree of prominence within the the-
matic sphere.

required to make the inference for himself, the compensation being that he is plunged right into the midst of things. It is perhaps no accident that the first three openings are characteristic of children's stories.

The most common way of expressing a phenomenon existing or appearing on the scene is with the existential 'there' (e.g. "There is a book on the table"). However, there are other verbs which characteristically introduce a phenomenon onto the scene. Amongst verbs which are used in this way are the following: 'exist', 'be present', 'occur', 'come', 'come into view', 'come on the scene', 'come in', 'come up', 'present oneself', 'take place', 'arise'. Other verbs can also be used in this way:

(2.33)   A haze | hovered | over the prospect.   Phenomenon − Existence   − Scene

(2.34)   A fly | settled | on his hair.   Phenomenon − Appearance − Scene

A similar analysis also applies when the object of a transitive verb obviously expresses the scene on which a phenomenon appears :

(2.35)   A dumb and grumbling anger | swelled | his bosom. Phenomenon   − Appearance − Scene

(2.36)   A dusky orange | dyed | his cheeks.   Phenomenon − Existence − Scene

or when a passive construction is used:

(2.37)   A blind and dumb man | was brought | to Jesus.   Phenomenon − Appearance − Scene

(2.38)   A terrible cry | was | to be heard.   Phenomenon −

Appearance

(2.39)   New Zealand apples | were being sold.   Phenomenon -

Existence

(2.40)   Many new houses | have been built.   Phenomenon -

Appearance

(2.41)   A serious mistake | has been made | by the company.

Phenomenon - Appearance - Scene

In the above examples, the distinction between the two scales
'Quality Bearer - Quality - Specification and Phenomenon - Exis-
tence/Appearance - Scene' is important because a correct analysis
of the distribution of CD depends on making this distinction.
However, there are cases where the distinction is not so important
and where it may be difficult to tell which analysis is the cor-
rect one. Firbas states that the concept of existence/appearance
on the scene is applicable even to context-independent objects
expressing phenomena that emerge as the outcome of some action.
He cites as an example effected objects of verbs of production
such as 'make', 'effect', 'build', 'construct', 'form', 'manufac-
ture' and 'produce' and states that the following two sentences
could be analyzed as Scene - Appearance - Phenomenon:

(2.42)   They | have effected | important changes.   Scene -

Appearance - Phenomenon

(2.43)   They | have built | dikes, roads and bridges.   Scene -

Appearance - Phenomenon

I would personally prefer to analyze these as Quality Bearer -
Quality - Specification, as it seems a bit strange to call an
agent a scene. However, this does not affect the analysis of the

distribution of CD.

2.3.2.3.2. Context-dependent Words.

Another aspect of meaning and FSP concerns the fact that there are some words that are inherently context-dependent. These are pronouns and deictics. Provided the orientation of the discourse does not indicate otherwise, these items will always, being context-dependent, carry less CD than the other elements in the sentence. Like all derivable elements, they will tend to the scenic end of the scale, although they can still act as quality bearers where there is no other element to compete.

Similarly, the definite and indefinite articles also, by their semantic content, affect the distribution of CD within the sentence. The definite article decreases the degree of CD carried by the nominal it qualifies while the indefinite article indicates novelty and an increase in the degree of CD.

2.3.2.4. The Influence of Context on FSP.

2.3.2.4.1. Basic Instance, Ordinary Instance and Second Instance Sentences.

In discussing the influence of context on FSP, it is important to distinguish three different types of sentences which are found in texts: 'basic instance sentences', 'ordinary instance sentences' and 'second instance sentences'. Basic instance sentences are characterized by "contextual conditioning giving linearity (i.e. word-order) and semantic structure full play" and usually occur at the beginning of a discourse, although Svoboda (Svoboda 1981 pp.104ff.) also finds them at the beginning of

paragraphs. All the elements in a basic instance sentence are context independent. Ordinary instance sentences are characterized by "contextual conditioning partly limiting the operation of linearity and/or semantic structure"; sentences which show signs of cohesion are of this type and they are found in the body of a text. Second instance sentences are characterized by "contextual conditioning maximally limiting the operation of linearity and semantic structure" (the three definitions quoted come from Firbas 1979 p.45); they "contain one non-thematic element (rheme proper) standing in sharp, ad-hoc contrast, while all the other elements indiscriminately represent an extensive theme" (Svoboda 1981 p.101). An example of a second instance sentence would be:

(2.44) (Did John give you the book?) - No, David | gave me
        the book.

The only new element is 'David' which stands out as rheme proper in contrast with the rest of the sentence which acts as an extensive theme.

2.3.2.4.2. The Concept of the Narrow Scene.

In the literature on FSP, the context is divided into what may be termed the narrow scene and the broad scene. Quoting from Firbas 1981 pp.38ff.:

> "The narrow scene is a complex of linguistic, and to a certain extent even of non-linguistic, phenomena operating in the foundation-laying process. This process selects the elements upon which within a sentence (clause) the core of the information is to be built up. The elements so selected constitute the foundation. ...
>
> From the speaker/writer's point of view, the foundation-laying process operates at the moment a sentence has been produced and a new one is to be implemented.

From the listener/reader's point of view, it operates
at the moment a sentence has just been mentally
digested and a new one is to be taken in. Naturally,
no preceding sentence exists at the beginning of a
monologic or dialogic (or plurilogic, for that matter)
discourse."

Firbas and Svoboda suggest that the constituents of the nar-

row scene are as follows: elements derivable from the immediately

relevant situational context, elements derivable from the immedi-

ately preceding verbal context (the immediately relevant preceding

flow of verbal communication), underivable foundation-laying ele-

ments, and the immediately relevant orientation of the discourse

(communication). The broad scene, on the other hand, consists of

the total verbal and situational context.

The qualification "immediately relevant" serves to emphasize

the fact that an item only remains retrievable for a limited

period, the exact length of which is dependent on the degree of

effort which one can expect the reader/hearer to pay. It should

be pointed out too that the speaker/writer and the listener/reader

are normally to be regarded as derivable. They can only be

regarded as underivable on account of contrast or some other spe-

cial reason.

Underivable foundation-laying elements become part of the

narrow scene because their meaning allows them to function towards

the scenic end of the semantic scale referred to in Section

2.3.2.3.1. Underivable adverbial elements can often act as set-

tings, as in the sentence "Two days ago I met a friend" used in

reply to the question "What can you tell me about yourself?",

where the underivable adverbial "Two days ago" functions as a set-
ting. You do, however, have to be careful in your analysis as
adverbial elements can also act as specifications, as in the sen-
tence "I met him two days ago" in reply to the question "When did
you meet him?", where the underivable adverbial "two days ago"
functions as a specification. The semantic function performed by
adverbial elements is particularly influenced, according to the
principle of linear modification, by their position in the sen-
tence. If they come in sentence-initial position, they will tend
to act as settings; if in sentence-final position, they will tend
to act as specifications. It is also possible for an underivable
nominal element to be part of the narrow scene, when it acts as a
quality bearer like the element "A king" in the sentence "A king
waged dangerous wars".

Firbas points out that it is also possible for verbs to par-
ticipate in the foundation-laying process. "This happens when in
the absence of a setting an intransitive verb is linked with an
underivable subject expressing a phenomenon existing/appearing on
the scene (cf. "Rain is falling."). No matter whether interpreted
as derivable or underivable, the verb is exceeded in communicative
importance by the underivable subject and in the absence of a set-
ting takes over its foundation-laying function".

In deciding whether an element is foundation-laying or core-
constituting, the reader/listener has to take into account the
immediate orientation of the discourse. In the sentence "Bob went
to the window" - where "window" conveys a notion derivable from

the preceding verbal context and perhaps even from the situational context - the speaker's immediate communicative concern is the indication of the goal of Bob's motion. This indication is the immediate communicative purpose imposed by the speaker upon the semantic and grammatical structure "Bob went to the window". As conveyer of the indication, "window" is underivable from the preceding verbal and situational context: in regard to the narrow scene, it is context-independent.

Sometimes the distribution of CD through the sentence is ambiguous. However, in the case of spoken language, intonation can be used to reduce this ambiguity, while in the case of written text the reader can read and reread it to ascertain the immediate communicative purpose of the writer.

2.3.3.   A Detailed Examination of Theme, Transition and Rheme, and Other Aspects of FSP.

2.3.3.1. Theme.

The theme or foundation-laying section of a sentence can consist of derivable *elements plus underivable elements allowed to do* so by their semantic properties. A setting, a verb expressing appearance or existence when no setting is expressed, or a phenomenon acting as a Quality Bearer, may all form the thematic section of the sentence.

Just as the Theme - Transition - Rheme is in the nature of a cline, some elements of the theme can be expected to contribute more to the message than others. This is discussed in great detail in Svoboda 1981. He distinguishes the diatheme, that which

contributes most to the message, from the theme proper, which contributes the least, and then for added delicacy adds the diatheme-oriented-theme and theme-proper-oriented theme. These four elements form a rising scale of CD as follows: i. theme proper, ii. theme-proper-oriented theme, iii. diatheme-oriented theme, iv. diatheme.

When a number of these thematic items occur, it is usually quite easy to establish their relative positions. However, it is often quite difficult to tell whether an item is thematic or diathematic in orientation - an important distinction as it is in fact the nearest anybody studying FSP has come to attributing to an item a more or less absolute degree of CD. In Svoboda 1983, Svoboda lists three criteria for establishing whether or not an item is diathematic. He says that diathemes perform the following functions:

i.   they link the (preceding) non-thematic spheres and the (following) thematic spheres by constituting ties between non-thematic and thematic elements.

ii.   they link the successive thematic spheres together by keeping a certain element in the foreground or foregrounding some of the background elements.

iii.   they introduce new information into the thematic sphere of the clause; in other words, they introduce new elements in such a way that they have to be regarded as thematic and are distinct from other new elements that are to function as non-thematic (transitional or rhematic).

Items which do not perform any of these functions are the-
matic. This distinction has important bearings on the question of
pause (c.f. Section 3.4. of Chapter Three) and it should not be
thought surprising if a similar distinction needs to be made
within the rhematic section of the sentence.

2.3.3.2. Transition.

The transition is composed of two parts: the transition
proper (traditionally regarded as consisting of the temporal and
modal exponents - TME's), and the rest of the transition (the
notional element of the verb where it has not been thrust into
rhematic position because there is no other element with more CD,
or sometimes a preposition).

The TME's are "all the formal expedients used by the finite
verb to convey its temporal and modal indications (e.g. the vari-
ation of the stem vowels in 'sing', 'sang' and 'sung', the verbal
suffix '-ed' and the auxiliaries)" (Firbas 1976 p.15). The term
'modal' includes Halliday's 'mood' and 'modality'. According to
Firbas, they mediate between the thematic and the non-thematic
sections of the sentence and carry the lowest degree of CD within
the non-thematic section. However, he argues, they are not the-
matic because in unmarked use the information they convey, i.e.
the temporal and modal indications, always appear as new and con-
textually independent. In Halliday's terms, one could say that
normally the speaker selects his communicative role and decides on
the form of his comment or assessment anew in every new act of

predication. The same applies to his establishing the temporal relation between the language event and the reported extralingual event; in other words, according to Firbas, the same applies to his choice of tense. However, although this is true of tense at the beginning of a text, it seems likely that tense becomes more derivable, and thus more thematic, as the text develops.

It seems then that what gives the TME's their mediating position is their interpersonal role of announcing that a certain category of speech act is being performed and indicating the attitude/commitment of the speaker/writer to what he is saying. In the absence of any lexical realization, this interpersonal role can be performed by intonation. The fact that they would thus seem to carry a constant degree of CD makes them a very handy reference point by which to gauge the CD of other elements in the sentence in some sort of absolute fashion.

It follows from the above that included in the TME's will be the interrogative elements of 'wh' words. This is dealt with most fully in Firbas 1972. He states that the question performs a double function: (a) it indicates a want of knowledge on the part of the questioner and appeals to the informant to satisfy this want; (b) it imparts knowledge to the informant in that it informs him of what the questioner is interested in (what is on his mind) and of the particular angle from which the intimated want of knowledge is to be satisfied.

The first function is in fact modal and is expressed by the interrogative word (where there is one) and the TME's. Since the

function they serve is modal, none of these can be regarded as rheme proper. In basic and ordinary instance sentences, the interrogative word and the TME's only play a secondary role in fulfilling this function and do not ultimately determine the angle from which a question is to be approached. This accounts for the fact that except in second instance sentences, the question word and TME's do not carry the nucleus.

2.3.3.3. Rheme.

The rheme is the least researched of the sections of the sentence. It can be divided into the rheme proper and the rest of the rheme and is perhaps amenable to the same sort of analysis as the theme. In the light of Winter's discussion of Vocabulary 3 items, and his work on expectancy, as well as work done on pause, it may be important to distinguish between two different types of rheme, equivalent to diatheme and theme in the thematic sphere. A 'diarheme' would be one which was fully semantically specified, which did not leave the reader/hearer expecting something more. A 'demi-rheme' would be one which left the reader expecting more. Candidates for filling this demi-rheme function would be Winter's Vocabulary 3 items and any other generic items with cataphoric reference. In intonation the presence of a demi-rheme would probably be indicated by a rise, although this is really moving beyond the scope of this research.

One element which does form part of the rheme, but which may at first consideration not seem to, is the 'negative focus anticipator'. The focus of a negation in a sentence will carry the

highest degree of CD in that sentence, and will be indicated in
speech by bearing the nucleus. The negative focus anticipator is
that item which anticipates it, not in terms of linear arrangement
but in terms of the cline of CD.

2.4. Conclusion.

In this chapter I have tried to lay the groundwork for the
chapters that follow. In Chapter 3 I shall seek to mould these
complementary approaches into a sensitive instrument for the anal-
ysis of cohesion. In Chapter 4, I shall discuss the results of
this analysis, and in Chapter 5 I shall draw my conclusions and
draw some system networks showing how the rules of cohesion oper-
ate in English and Arabic.

CHAPTER THREE

METHODOLOGY

3.1. The Selection of the Samples.

In this research two sets of data were analyzed. The first set was selected from two anthologies, one of Arabic and the other of English literature. The second set was selected from M.A. theses in history. The first set (hereafter referred to as Corpus A and Corpus B) is described in Section 3.2 and the second set (hereafter referred to as Corpus C and Corpus D) is described in Section 3.3.

3.2. Corpuses A and B.

These corpuses each consist of ten paragraphs randomly selected from an Arabic and an English anthology respectively. The Arabic anthology is entitled "Major Themes in Modern Arabic Thought: An Anthology", edited by T.J. LeGassick, and is intended, so the editor says in the Preface, for "advanced students of Arabic who wish to gain a first-hand acquaintance with the major writers of Arabic expository prose of the modern era". The English anthology is entitled "Points of Departure", edited by Carr and Steinhoff, and intended for American high school students of English. Both anthologies, therefore, are intended to be models of good written style in Arabic and English respectively. Both comprise excerpts from works written over the last 150 years and both contain rhetorically powerful pieces. The corpuses may therefore be considered situationally comparable.

Pages were selected randomly from the books and the top paragraph on the page was chosen for analysis. Where more than one page by the same author was selected, one of these pages was ignored and another random page was selected. Thus each corpus consists of short excerpts from the work of ten different authors. The passages are written out in full in Apendices A and B.

The authors of each passage in Corpuses A and B are given below, along with their dates and nationality:

Corpus A.

Passage 1	Peter Viereck	Am.	1916-
Passage 2	Anthony Trollope	Eng.	1815-1882
Passage 3	Loren Eiseley	Am.	1907-
Passage 4	D.S. Freeman	Am.	1886-1953
Passage 5	James Madison	Am.	1750-1836
Passage 6	Carl Becker	Am.	1873-1945
Passage 7	Austin Coates	Am.	book print. 1955
Passage 8	Mark Twain (S.L. Clemens)	Am.	1835-1910
Passage 9	Lawrence Wylie	Am.	1909-
Passage 10	H.M. Tomlinson	Eng.	1873-1958

Corpus B.

Passage 1	Ahmed F. al-Shidyaq	Leb. (C)	1801?-1887
Passage 2	Taha Hussein	Eg. (M)	1889-1973
Passage 3	Farah Antun	Leb. (C)	1874-1922
Passage 4	Abu Khaldun al-Husari	Syr. (M)	1880-1968
Passage 5	Khayr al-Din al-Tunisi	Tun.Mamluk	1810?-1889
Passage 6	Michel Aflaq	Syr. (C)	1910-
Passage 7	Mustafa al-Manfaluti	Eg. (M)	1876-1924
Passage 8	R. R. al-Tahtawi	Eg. (M)	1801-1873
Passage 9	J. al-Din al-Afghani	Afghan (M)	1839?-1897
Passage 10	A. Rahman al-Jabarti	Eg. (M)	1754?-1825

3.3. Corpuses C and D.

These corpuses also consist of ten passages each. They are often longer than one paragraph per passage, but their lengths are

as uniform as possible given the constraint that formal paragraphs should not be broken up.

I made every effort to ensure that the corpuses were strictly comparable while at the same time seeking to find a field where Arabic style would be at its most archetypal. M.A./Ph.D. theses were chosen to ensure strict uniformity of goals. The field of history was chosen because I felt that in this field more than any other there is a solid tradition of Arabic literary endeavour relatively innocent of the influence of Western style, while at the same time the approaches adopted by Arab and European scholars to the study of history remain similar. Theses on scientific subjects were rejected because Arab scientists are often influenced by the style of the western textbooks and magazines they have to read. Moreover, they have probably had a university education in some other medium than Arabic. Theses on Arabic language were rejected because the Arab's approach to his language is so much influenced by religious considerations. Theses on any other language were rejected because Arab students in particular would be influenced by the style of the language they were studying. This leaves either history or geography, and I chose history as the Arabic tradition in this field is perhaps slightly stronger.

Theses from the Azhar were chosen as this university is still regarded as the seat of Arab Muslim learning and prides itself on continuing to be a bastion of pure Arabic usage. This reputation was reinforced by my own observations. Lecturers in history whom I spoke to in the Azhar itself told me how from their earliest

years in education they had grown up in Azhar institutions, and how, even as research students, they were discouraged from reading too many foreign books or even translations of foreign books.

All the Arabic theses selected were written by lecturers actually on the staff of the Azhar and available for interview during the summer of 1984. This was necessitated by the fact that I could only obtain copies of parts of their theses directly from the authors themselves and not via the library. This was inconvenient but I was able to turn it to advantage by giving each author a questionaire checking amongst other things whether he had received any education outside the Azhar or whether he knew any foreign languages. The answers to both questions were almost totally in the negative. The fact that the authors of the theses are all lecturers in the Azhar also ensures that their theses are considered to be of an adequate standard and in conformity with the general approach of the Azhar.

Mainly for reasons of convenience, the English theses were chosen from the archives of the Department of History at the University of Leeds. They were chosen randomly, and then a list of those chosen was submitted to the Head of. the History Department to ensure that they were representative of the approach to historical research taken by the department. The head of department assured me that they were.

From each thesis selected, I made copies of the introduction. Then, in order to ensure as much as possible uniformity of con-

text, the first paragraph or two was selected from each introduc-
tion, with the exception that in the case of the Arabic theses the
introductory Islamic formulas exalting the name of God were omit-
ted when they occurred.   In the case of both Arabic and English
theses the length of text chosen per extract was about one double-
spaced type-written page of A4 or foolscap.

3.4. The Division into Units.

This proved to be one of the most problematic areas of the
research.   The problem arises because of the difficulty of for-
mally defining the written Arabic sentence in Arabic.   In English
a written sentence always begins with a capital letter and ends
with a full stop.   However, even if a text is unpunctuated, sen-
tences can almost always be picked out.   This is because English
has a clear distinction between subordinating and coordinating
conjunctions on the one hand and discourse adjuncts on the other.
For example, without additional punctuation, two clauses cannot be
joined by the discourse adjunct 'however' but they can be joined
by the conjunction 'although'.

Moreover, in English there is a sensitivity to the phenomenon
of subordination perhaps inherited from Classical Greek and Latin.
Although not as clearly signposted by case and mood as it was in
Latin and Greek, subordination continues to be imposed on the sen-
tence structure of English, at least written English, even when
the data is ambiguous.   Thus there is a clear distinction in most
grammars between coordinating and subordinating conjunctions.   For

example, Quirk and Greenbaum (1973) distinguish between the subordinator 'although' and the coordinator 'but', listing the following as examples:

(3.1)   He tried hard, but he failed.

(3.2)   Although he tried hard, he failed.   (op. cit. p.254)

On closer inspection, however, what makes the formally subordinate clause in (3.2) informationally subordinate is the fact that it is known information, indicated by the fact that it comes before the main clause. In fact, Winter (Winter 1982) argues that the subordinate clause characteristically conveys known information whereas the main clause conveys unknown information. However, the status of the information contained in the clause is not indicated by the formal status of the clause but by the position of the clause in the sentence and the presence or absence of a comma after it. In initial position a subordinate clause conveys known information but in final position it more often conveys unknown information. This can be illustrated by changing the order of (3.2):

(3.3) He failed, although he tried hard.

Here the subordinate clause conveys unknown information, as does the main clause. The function of formal subordination in English would seem to be to indicate that the information contained in it is background information, incidental to the main flow of the text.

None of these criteria is applicable to Arabic. There are no capital letters in Arabic, and punctuation is used very errati-

cally (see Williams 1984a for a more detailed study of Arabic punctuation). This combines with three other factors to make the formal definition of the Arabic written sentence impossible, if not misguided. Firstly, there is no clear distinction between subordinating and coordinating conjunctions on the one hand and discourse adjuncts on the other. This means that both 'although' and 'however' can be translated by the Arabic "ma9a 'anna". Secondly, the Arabic "wa" is used both as a coordinator and as a subordinator, and in places to hold clauses apart rather than to draw them together (cf. Beeston 1973):

(3.4)   huwa taxi:n wa hiya rafi:9a.

He is fat and she is slim.

(3.5)   'iltaqaytu bihi wa 'ana ma:Si: filmadi:na.

I met him while I was walking in the city.

(3.6)   .... wa huna:ka masa:'il 'uxra:

There are other issues.

Thirdly, in Arabic the indefinite relative clause is structurally independent of its containing clause. This is illustrated by (3.7):

(3.7)   'iltaqaytu birajulin 'a9ta:ni: xamsa quru:S.

I met a man who gave me five pence.

Thus asyndetically linked clauses may be structurally related whereas syndetically related clauses need not be structurally related. Fourthly, preposed clauses introduced by words like "ma9a 'anna" ('although'), "li'anna" ('because') etc., which might

on semantic grounds be considered dependent on a following main clause, are very rare. The only exception to this is the case of conditional clauses introduced by "'in", "'iDa" or "law". This means that the Arabic reader is very insensitive to formal subordination as it does not coincide in his experience with linear modification nor has it been reinforced by the influence of Greek or Latin grammar.

I concluded from all this that the search for formally defined sentences in Arabic was misguided, and so I began to take a completely different approach. In my MA dissertation (Williams 1982) I argued for a rhematic clause, defined as a unit containing at least one rheme proper. I now believe this approach to be circular as one can only divide a unit into theme and rheme once the units themselves have been established on some other criterion. Instead, I propose to adopt a definition of sentence (or rather in my terminology in this thesis a 'rhematic clause', henceforward abbreviated to RC and used as the principle unit of analysis instead of the sentence), show how it can be applied, and then make certain assumptions about its theme-rheme structure. The definition I propose to take is that of Gardner and Hervey: (a sentence is a) "'signum' such that it is a self-contained vehicle for conveying messages". This self-containedness, I would argue, must manifest itself on the ideational, the textual and the interpersonal levels. Completeness on these three levels is reflected together in the grammar, but it manifests itself, as Halliday would argue, in different ways. Ideational completeness means

that all the slots implied by the process chosen should be satis-
factorily filled. Textual completeness means that there must be a
whole message conveyed by the 'signum', and interpersonal com-
pleteness would seem to imply that at least one complete speech
act should be performed (1). In this research, I shall not be
concerned with interpersonal completeness and I shall not discuss
it any further. However, ideational and textual completeness form
the basis for the division into units which is described below.

I assumed on the basis of work such as Kreckel 1981 and that
described in Brown and Yule 1983 (p.162ff) that textual complete-
ness is signalled by pause (as well perhaps as by other means not
relevant here). From a group of ten linguistically naive English
students who had volunteered to help me, I therefore selected one
with experience of acting and with a good reading voice and had
her read aloud all the English texts in batches of three. Then
from a group of four Arab volunteers I selected an Iraqi student
who assured me that he had been trained as a newsreader and had
him read aloud all the Arabic texts, again in batches of three.
Both subjects were given the same instructions, to read the texts
slowly and with expression, as if reading aloud to a large audi-
ence.

All the readings were recorded, and then the pauses in the
flow of speech were measured with the help of a mingograph as
described below. The mingograph was wired as illustrated in Dia-

----

(1) Defined in this way, my RC is similar to Chafe's 'idea unit'
(Chafe 1980 pp.13-16).

gram 3.1. and a typical page of output is reproduced in Figure

```
                                            timer  |Ch1
                                pitch              |
                       ____                        |
                      | F/0 |------------------|Ch2
              |-------|meter|   duplex osc.        |
   _____   |       |_____|------------------|Ch4
  |tape     | |       ___                         |
  |recorder |----|    |atten|   oscillogram   |
  |_____|   |     |uator|------------------|Ch5
               |       |____|                      |
               |                                   |
               |                                   |
               |       _____                       |
               |      |filter|                     |
               |      |------|                      |
               |                                    |
               |       _____   HP 3.3 khz|
               |      |intensity|--------------|Ch6
               |------| meter    |   full freq.|
                      |_____|--------------|Ch7
                                                   |
    ____              ___                          |
   |    |            |   |                         |
   |tape|----------------|buzz|------------------|
   |____|            |___|
```
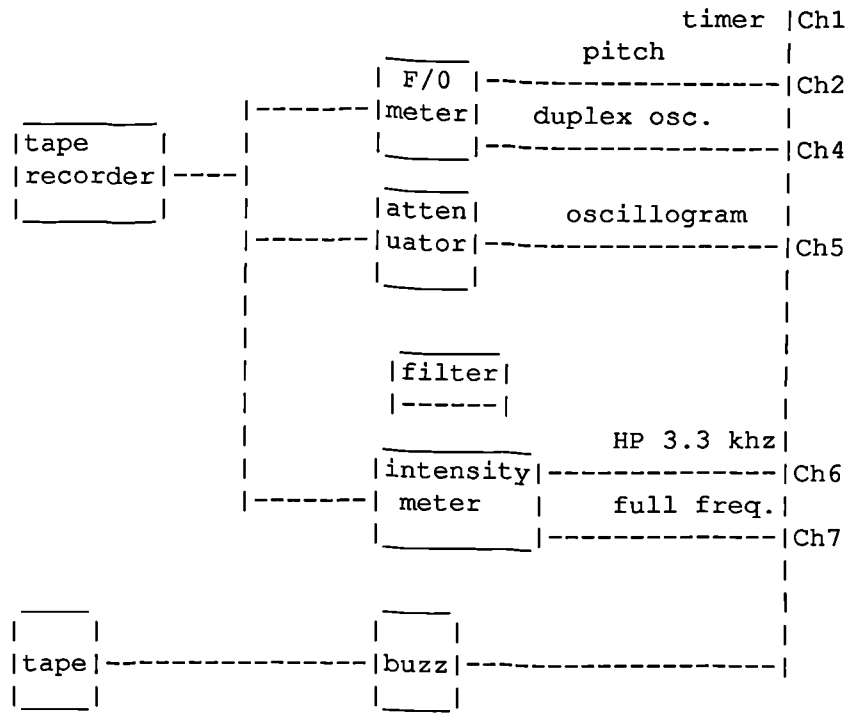
                         FIGURE 3.1
                  The Wiring of the Mingograph

3.2. The first line of output, being the output from the funda-
mental frequency meter (Ch.1), records the intonation pattern; the
second (Ch.3) records the buzzer which helped me to find my way
around the text; the third, being the output from the duplex
oscillogram (Ch.4), records the presence of sibilants and frica-
tives; the fourth, being the output from the oscillogram (Ch.5),
the degree of voicing; and the fifth, being the output of the
intensity meter (Ch.6 and 7), sound intensity. A pause was indi-
cated by straight lines on all the last three lines of output.
Isolated oscillations, caused by the rustling of papers, coughing
or noisy breathing, were ignored. The pauses thus located were
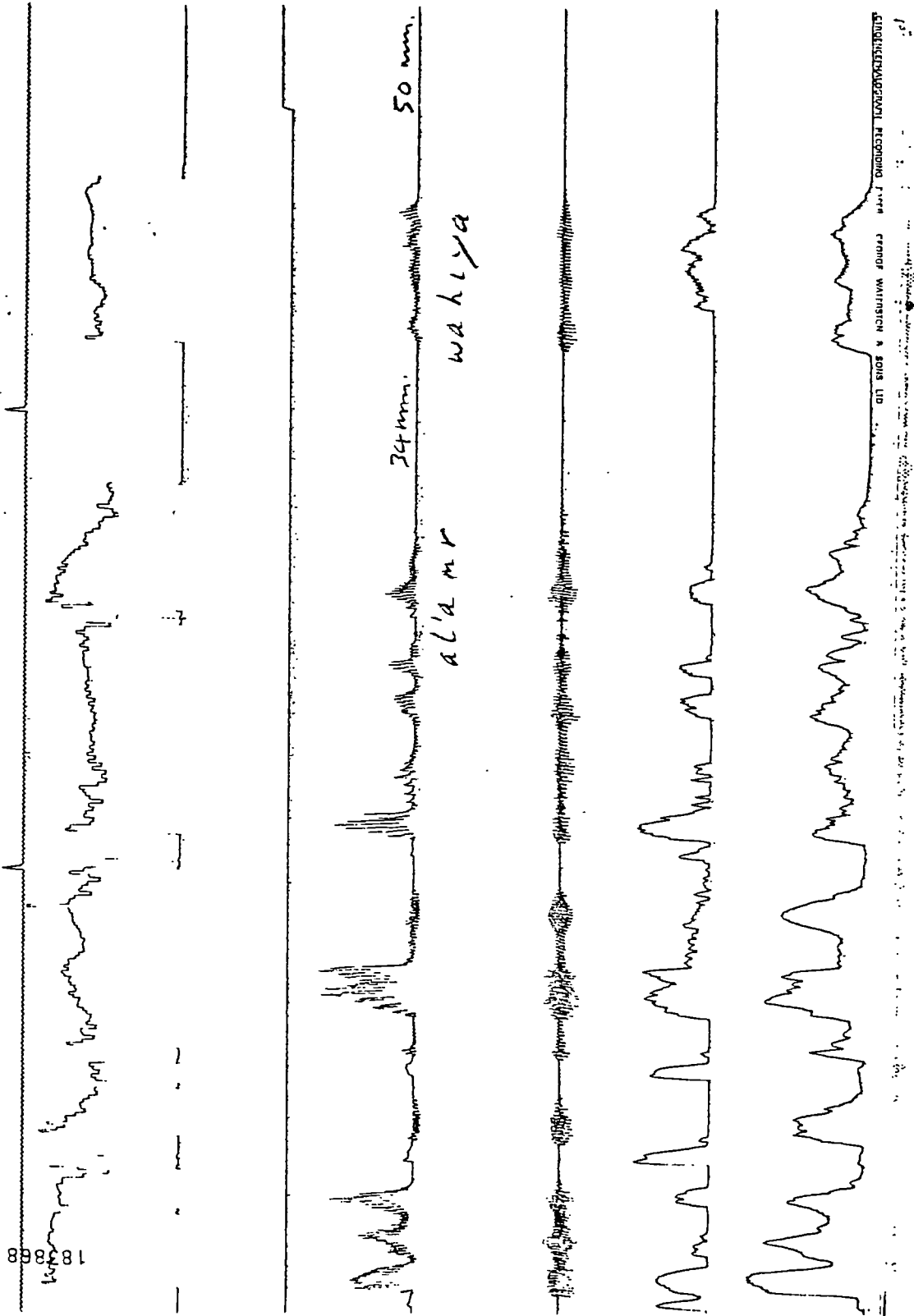
FIGURE 3.2

divided into three classes, roughly equivalent in principle to Brown and Yule's 'short', 'long' and 'extended' pauses (Brown and Yule 1983, p.163): 0.49 secs. and below (marked by '/'), 0.50 to 0.99 secs.(marked by '//'), and 1.00 secs. and above (marked by '///'). The first class of pause was ignored for the purposes of this research, the second class was considered a discretionary break and the third class was considered a compulsory break. Whether or not a discretionary break was counted was determined on the basis of ideational completeness. This can be seen worked out in practice in Appendices A-D. In general, this procedure worked well. Occasionally, a long pause (more than one second) occurred in the middle of a word group, having no correspondence with any syntactic or semantic break (e.g. B.7:8, 9:4, 10:1). Occasion- ally also, a major semantic break occurred, which was not reflected by a pause (e.g. B.3:12; 5:12; 6:1; 7:3; 8:9)

3.5. The Cohesive Analysis.

Having divided the texts into units on the basis described above, the cohesive items in the four corpuses were all analyzed using a modified version of Halliday and Hasan 1974. The details of the category headings are given below, with particular emphasis being placed on those which I have introduced for the first time or those where my treatment departs significantly from that of Halliday and Hasan 1974.

3.5.1. Reference.

The categories of reference used follow exactly those
described in Halliday and Hasan 1974. The category R1 includes
pronouns other than those included under the category 'Modal
Items' discussed below. No distinction is made in the case of
Arabic between independent pronouns and those compulsorily con-
tained within the morphology of the finite verb. A pronominal tie
is not counted in Arabic when its referent is expressed by a lexi-
cal item with the same ideational role in the RC. In this way,
the treatment of both Arabic and English pronominal ties is made
exactly comparable. In addition, in the case of both Arabic and
English, when more than one pronoun in one RC refers to the same
entity, only one tie is counted, however many times the pronoun is
repeated.

R2 includes the definite article and the deictics 'this',
'that', 'these' and 'those' and their equivalents in Arabic,
namely "ha:Da", "Dalika", ha:Dihi, and "tilka". As definiteness
is expressed in Arabic before every noun and adjective in a nomi-
nal group (except when the noun or adjective is the 'possessed'
element in a 'construct' or 'idafa' construction, in which case it
is considered to be defined by the 'possessing' element) whereas
in English it is only expressed once in each nominal group, only
one indicator of definiteness is permitted to count as a tie in
each Arabic nominal. Thus, in the case of the nominal group "al-
bayt al-kabi:r", only one "al" is counted as forming a tie, not
two.

R3 includes lexical items which depend on an earlier word for
their point of comparison. These can be treated exactly the same
way in both English and Arabic. Examples of these are as follows:
in Text A8, 'neighbouring' in RC9 picks up 'to Hadleybury' in RC6;
in Text A10, 'another' in RC16 picks up 'stare' in RC7; in Text
B10, "'uxra:" in RC5 picks up "9aSar mara:kib" in RC2 and "gayr"
in RC28 picks up "al'iskandariyya" in RC27.

3.5.2. Substitution.

Substitution is similar to reference except that the relation
assumed is one of wording rather than meaning. My approach to
this category follows closely that taken in Halliday and Hasan
1974, making a basic distinction between nominal, verbal and clau-
sal substitution. The structure of Arabic requires no modifica-
tions. I therefore content myself here with giving two examples,
one in English and one in Arabic:

(3.8)   (a) But with her politics were always an affair of the
         heart, (b) <u>as</u> indeed were all her convictions.
         (A2.6-7)

(3.9)   (a) wa Da:lika 'anna: nara:hum yatana:fasun fi:
         lmala:bis wa 'aTa:Ti lmasa:kin wa naHwiha: mina
         dduru:riyya:t (b) wa <u>kaDa</u> l'asliHa wa sa:'iri
         llawa:zimi lHarbiyya (B5.7-8)

         (a) That is to say, we see them vying with each other
         in clothes and furniture and other necessities, (b) and
         <u>also</u> in weapons and other essentials of war.

Example 3.8 is a case of nominal substitution and Example 3.9 is an example of clausal substitution.

3.5.3. Ellipsis.

Ellipsis can, as Halliday observes, be regarded as a special case of substitution, where the substitutionary item is zero. Under this category I include all cases of structural ellipsis. However, in addition, I include those cases where optional elements are ellipted, while Halliday and Hasan exclude them (Halliday and Hasan 1974, pp.204-5).

This builds on observations made in Section 2.3.1.1.3. above, to the effect that ellipsis may be signalled by the context. To repeat what I said above (p.47), "a slot entailed by a particular script or frame and whose specification is germane to the context is left vacant to be filled in by reference to the context". To use Berry's term (Berry 1977, pp.28-31) it is 'included' but not 'inserted', or to use Hasan's term (Hasan 1984, p.124ff.) it is implicit rather than explicit. Although I have called it 'semantic' ellipsis, it is *controlled by the requirement* that the ellipted item be found in the immediate context and be suggested by analysis of the surrounding clauses.

Five examples will suffice to clarify how the category of ellipsis was extended in this way:

(3.10)   (a) By the time the more distant cries started the
          man on the wall of the Jama Mosque had ceased and
          was descending the stone stairway to the court, (b)

0 the worshippers had left their ordered lines and were rolling up their mats and gathering around the water-tank, (c) and 0 my little teacher was ravenously taking meat cakes out of his packet of provisions and gulping them down. (A7.7-9)

In this example, the temporal slot entailed by the actions referred to in the clauses beginning 'the worshippers ...' and 'my little teacher ...' can only be filled by reference to the adverbial clause beginning 'By the time ...'.

(3.11)   (a) At recess one afternoon Jules Marchal jumped from a wall and hurt his arm. (b) Everyone crowded round 0. (A9.2-3)

In this example, the completive is omitted following the preposition 'round'. Its omission is permitted syntactically because 'round' does dual service as an adverbial as well as being a preposition, but the nominal 'Jules Marchal' has to be inserted in order to make sense of the text.

pi 0 (3.12) He stared at me briefly, then turned his head away wearily as if he had seen all he wanted. (b) I was dismissed 0.   (A10.9-10)

Here, it is the actor that is omitted. Unlike some verbs (e.g. 'break') the verb 'dismiss' entails an actor and this can only be supplied by reference to the context.

(3.13)   (a) azziwa:j Sarika fi:hi rrajul 9a:mil qawi: xiSn

li'annahu maxlu:q lil9ira:k wa zziHa:m,   (b)   wa   0

lmar'a lati:fa naHi:fa 9amaluha: fi manziliha:.
          •

(B3.8-9)

(a) Marriage is a company in which the man is the
strong uncouth partner because he was made for sweat
and toil, and (b) 0 the woman is gentle and tender
and her work is to look after the home.

Here the matrix clause 'azziwa:j Sarika' is omitted.

(3.14)   (a) wa 9ala SSa:bbi l9arabi: 'an yanzur 0 bikulli
                                                •

turu: wa hudu: , wa niza:ha fi lHukm wa safa:' fi
                                                •

DDihn 0 ... (b) yanzur 'ila ha:Dihi lmuSkila... wa
                    •

ya9rif ma: huwa nasi:ba ... (B6.11-12)
                       •

(a) The Arab youth must look very carefully and
calmly, wisely and clear-headedly 0 ... (b) he must
look at this problem and find out what is the por-
tion of ...

Here the complement is omitted, a rare case in Arabic of

ellipsis creating a cataphoric tie.

3.5.4. The Category of Modal Items.

The category of modal items could perhaps be regarded as a

subcategory of 'Reference' except that it has a primarily inter-

personal rather than ideational function. The heading refers to

those cases where the writer overtly refers to himself or directly

intrudes into the text or directly addresses the reader in the

second person. It does not include cases where the writer refers

to himself as a participant in the action of the text. Five exam-

ples of this category are given below:

(3.15)   Of reasoning from causes I think that she knew noth-

          ing.

In this example, the first person pronoun functions as sensor

in a mental process clause.

(3.16) As we shall see, the ideas developed about social jus-

          tice in Leeds in terms of the relationship between

          the classes indicate that the conventional stereo-

          type of the 'one-dimensional' Victorian mind calcu-

          lating mechanically according to the laissez-faire

          ideas of political economy is not an entirely accu-

          rate one. (C5.17)

In this case also, the first person pronoun functions as a

sensor within a mental process clause.

(3.17)   The laity were, of course, the major element in the

          Church, and in considering their role both in the

          Church and in the non-Catholic community of York-

          shire, I have emulated John Bossy, ... (C3.9-10)

This example is somewhat trickier, in that the verb 'emulate'

is not a mental process clause. Rather, it can be paraphrased

here by the phrase 'try to be like' and the clause is therefore a

relational one, and the pronoun functions as a bearer.

(3.18)   (a) wa lam 'alzim nafsi: bi9a:mil mu9ayyan mina

          19awa:mil lmutaHakkima fi: tafsi:ri l'aHda:Ti

tta'rixiyya (b) bal 'inna tta9addud fi ttafsi:r huwa

manhaji:. (D1.12-13)

(a) I will not confine myself to just one of the
factors influencing the explanation of historical
events (b) but rather my approach is a multi-pronged
one.

Here we have the question of how to classify the verb 'laza-
ma' (translated here as 'confine'). The first part of the clause
could be paraphrased 'I will not only deal with...', 'I will not
only write about ...'. If this is the case, then it is really a
verbal process and the pronoun functions as 'speaker'. A similar
line of reasoning can be followed in the case of the process
related to 'manhaj' (programme) to which the pronoun is a subjec-
tive genitive.

(3.19)   wa naHnu la:n tuja:h mas'ala kubra: (B3.2)

         We are now face to face with a bigger question.

Like Ex.(3.17) above the pronoun acts as the bearer within a
relational process clause.

The controlling factor throughout is that modal elements do
not contain pronouns functioning as actors within material process
clauses.

3.5.5. Conjunction and And/"Wa"

The categories of conjunction used in this research follow
closely those described in Halliday and Hasan 1974 (pp.226ff.),
including the categories 'additive' (C1), 'adversative' (C2),

'causal' (C3) and 'temporal' (C4). No distinction is made for the
purposes of this analysis between conjunctions and adjuncts. The
one condition for their being counted in this category is that
they join two RC's or two groups of RC's.

One modification is needed in view of the peculiarities of
Arabic text grammar; this is the setting up of a separate category
entitled And/"Wa". This is because "wa" is not really a conjunc-
tive item in the sense that other Arabic conjunctions are. It can
be regarded as a 'quasi-punctuation device' and to include it with
the other conjunctive items would badly distort the results. How-
ever, if "wa" is excluded from the main body of conjunctive items,
then perhaps 'and' should be treated separately as well. This is
taken up in more detail in Section 4.1.1.6. Two examples are
included here to show the items included:

   (3.20)   In 1939 the Allies went to war in defence of western

             civilizaton <u>and</u> afterwards divided into two ideolo-

             gically separate blocks. (C2.8-9)

   (3.21)   (a) na9am la: yunkar 'anna wuju:da lgani: wa lfaqi:r

             fi ddunya: la: budda minhu ka wuju:di ljami:l wa

             lqabi:H. (b) <u>wa</u> law la: Da:lik lawaqafa lkawn 9ani

             lHaraka wa ta9attalat almasa:liH kama: 'afa:dahu

             lmutallimu:n. (B1.1-2)

             (a) No, it cannot be denied that the presence of
             rich and poor in the world is inevitable, like the
             presence of the beautiful and the ugly. (b) <u>And</u> if
             it was not for this, the universe would stand still
             and ...

3.5.6. Lexis.

The following is a list of the subcategories occurring under this heading:

L1. Same item

L2. Synonym or near synonym.

L3. Hyponym or meronym.

L4. Superordinate.

L5. General item.

L6. Co-hyponym or co-meronym.

L7. Lexical connector.

L8. Formal paradigmatic relationship not otherwise covered.

L9. Semantic paradigmatic relationship not otherwise covered.

L10. Interpersonal similarity.

L11. Antonymy.

L12. Lexical Chain.

L13. Repetition of clause structure.

L14. Paraphrase of clause.

Each of these categories will be looked at in turn:

Same Item. This refers to cases where the same item is repeated in a text to form a tie. Repetition is counted whether it is singular or plural, masculine or feminine.

Synonym or near synonym. Lexical items are counted in this category when they are used with a shared sense in a particular text, whether or not they have the same referent.

Hyponym or meronym. Lexical items are counted in this category when they indicate part of a larger whole mentioned elsewhere

in the text (the relationship of meronymy), or when they indicate a sub-class of a class mentioned earlier in the text (the relationship of hyponymy). A natural extension of the concept of meronymy is to refer to characteristic parts of objects (e.g. frames) and characteristic parts of processes and social events (e.g. schemas). Examples of hyponyms include 'France', 'Germany' and 'Italy' (Text C2, RC11) as hyponyms of 'every major European power' (Text C2, RC1), and 'in 1925' (Text C2, RC12) as a hyponym of 'between the two world wars' (Text C2, RC1). Examples of meronyms include 'Yorkshire Wolds', 'Vale of York', 'Pennine Dales' and 'West Riding' (Text C6, RC5) as meronyms of 'County of the Broad Acres' (Text C6, RC2).

Superordinate. This is the converse of hyponymy and meronymy. Lexical items are counted in this category when they are in a superordinate relation with items elsewhere in the text. It might appear at first that having two categories which are the converse of one another implies that all ties in this category and the one above implies that all ties in these two categories are counted twice. This is not the case, however, as ties in these two categories cannot be cataphoric. Hyponyms and meronyms by virtue of their very nature cannot form a cataphoric relation, and superordinates with cataphoric reference are included under the category 'Lexical Connector' below. Examples of this category are 'the king' (Text C1, RC13) as a superordinate of 'Edgar' (Text C1, RC3) and 'assumption' as a superordinate of the previous RC (RC12). This category thus

includes many of the cases described by Hasan as 'instantial relations'.

General Item. Items belonging to this category fall, as Halliday and Hasan say, "on the borderline between being lexical items and grammatical items" (Halliday and Hasan 1974 p.274). They are the terms used for ultimate generalities, and Halliday and Hasan give a reasonably comprehensive list (ibid. p.274). Examples include the word 'fact' in Text C2, RC15, 'period' in Text C3, RC14), and in Arabic "al-mayda:n" (scene) in Text D2, RC15, "al-fatra" (Text D4, RC11) and "al-9asr" (Text D4, RC16) both meaning 'period'.

Co-hyponym or Co-meronym. Items belong to this category if they have a co-hyponymous or co-meronymous relationship with another item in the text, whether or not the superordinate item is inserted in the text, provided that the superordinate is implicated by the text in question. Examples include: 'M.A. Fitz-Simons' (Text C7, RC11) as a co-hyponym of 'Elaine Windrich' (Text C7, RC1), being co-members of the class of historians, although the word 'historian' is not used in the text; 'quarrying' (Text C8, RC3) as a co-hyponym of 'coal-mining' (Text C8, RC6), being co-members of that class of activities which involve extracting things from the ground; "az-zamani:" ('temporal') (Text D3, RC8) as a co-hyponym of "al-maka:ni:" ('spatial') (Text D3, RC4), both of these being dimensions of the world in which we live; and "ash-sha9b" ('the people') (Text D3, RC10) as a co-meronym of "al-Ha:kim" ('the ruler'), both being co-participants in the act of government.

Lexical Connector. An item falls in this category if it func-
tions as one of Winter's Vocabulary 3 items, as well as all
superordinate items with hyponyms in the immediately succeeding
context. This category overlaps with that of superordinates
discussed above, but is distinguished from it by its cataphoric
reference and its textual function of making a commitment and
signalling a clause relation of Generalization-Particulars.
Examples of this category are: 'aspects' (Text C6, RC11),
which has cataphoric reference to RC12-17; 'span' (Text C6,
RC18), which has cataphoric reference to '1760-1780' in RC19.
When a lexical connector is picked up by a lexical item rather
than by an RC or group of RC's in the succeeding text, the item
to which it refers will be in a hyponymous relationship to it.
In this case, therefore, and in this case alone, the same two
items form a double tie. This can be justified by the fact
that signalling of this sort does strengthen the cohesion of
the text.

Formal Paradigmatic Relationship not otherwise Covered.
Included in this category are cases where the same root is used
in different RC's but to form lexical items belonging to dif-
ferent word classes or in the case of Arabic to form verbs fol-
lowing different patterns. Examples of this category are: 're-
form' (Text C1, RC3) related in form to 'reformation' (Text C1,
RC1); 'effectiveness' (Text C1, RC6) related to 'effective'
(Text C1, RC 2); "misriyi:n" (Text D2, RC8) related to "misr"
(Text D2, RC2); and "nabHaT" (Text D2, RC12) related to
"ba:HiTi:na:" (Text D2, RC2). Items are only included in this

category if they fail to fit into any of the above more seman-
tically based categories.

Semantic Paradigmatic Relationship not otherwise Covered.
Items falling into this category have a weak collocational or
semantic link which is not covered by any of the other catego-
ries listed above; they very often belong to different word
classes. As in the case of the 'Formal Paradigmatic Relation-
ship' category above, items are only included in this category
if they fail to fit into any of the above categories. Examples
of this category include: 'monasticism' (Text C1, RC5) to 'Ab-
beys' (Text C1, RC4); 'royal' (Text C1, RC6) to 'King' (Text
C1, RC5); and 'ruled' (Text C1, RC7) to 'King' (Text C1, RC6).

Interpersonal Similarity. This category is suggested by Hasan
(Hasan 1979, p.374) and covers cases where there is a type of
synonymy on the interpersonal rather than the ideational level.
There are very few cases in the corpuses, and all appear to
occur in the English corpuses. Examples of this category
include: the relationship of 'precariousness' (Text A1, RC8) to
'doom' (Text A1, RC4) with their suggestion of evil and diffi-
culty; the relationship of 'progress' (Text A1, RC3) to 'en-
lightened reformers' (Text A1, RC1) and 'liberated' (Text A1,
RC2) with their overtones of approval.

Antonymy. This category includes all cases where two words are
in a cohesive relationship of contrast or opposition. Examples
of this include: 'became silent again' (Text A7, RC11) in

opposition to 'cried on' (Text A7, RC1); 'nearer' (Text A7,
RC11) as opposed to 'farther' (Text A7, RC1); "almar'a" ('the
woman') (Text B3, RC9) as opposed to "ar-rajul" ('the man')
(Text B3, RC1); and "lati:fa" ('gentle') (Text B3, RC9) as
opposed to "xiSn" ('rough') (Text B3, RC1).

Lexical Chain. Items are included within the category of Lexi-
cal Chains when they consist of groups of more than one word
repeated in different RC's. Examples of this are: 'exact sci-
ence' found in Text A1, RC1 and recurring in RC5; and "fi:
bila:di 19arab" found in Text B2, RC1 and recurring in RC10.
This category does not include cases where more than one ele-
ment of clause structure is repeated. These are included
within the following category.

Repetition of Clause Structure. Like lexical chains, this cat-
egory includes cases where groups of more than one word are
repeated in different RC's. This category is distinguished,
however, from lexical chains in that while repeated items in
lexical chains form no more than one element of clause struc-
ture, this category includes cases where lexical items forming
more than one element of clause structure are repeated in dif-
ferent RC's. An extreme example of this is found in Text B2
where the elements "yajib 'an 'uHaddiTuka" ('I must tell you')
and "wa ma: bayn ... wa bayn ... min sila" ('and what is the
relationship between ... and ...') become a refrain throughout
the text. Another example is found in Text C8 where the frag-

ment of clause structure 'working days were lost' is repeated in RC1, RC3, RC4, and RC5.

Paraphrase of Clause. This category includes cases where one clause is paraphrased elsewhere in the text. This is not very common but there is one example in Text B6 where "muxa:lifan kulla lmuxa:lifa" ('totally contradictory') (RC5) paraphrases "yablug ... Hadda ttna:qud" ('reaching the height of contradiction'), and another in Text C7 where 'discarded socialist principles' in RC19 paraphrases 'drawn away from the traditional Labour ideas' in RC11.

This concludes our description of the lexical categories used. The reader may be helped by a list indicating the order of precedence of the different categories. If an item is counted in a higher category, it is not included in a lower one:

1. Repetition of Clause Structure.

2. Paraphrase of Clause.

3. Lexical Chain.

4. Same Item.

5. Lexical Connector.

6. Synonym/Hyponym or Meronym/Superordinate/General Item/Antonym.

7. Formal paradigmatic relationship not otherwise covered.

8. Semantic paradigmatic relationship not otherwise covered.

9. Interpersonal similarity.

This scale was followed even when there might have been another item from a lower category within closer proximity. By

using these categories in this way any distortions would serve to reduce the significance of any results rather than to exaggerate them. This is particularly true in the area of repetition structures where no attempt has been made to weight larger units of repetition. Moreover, any inconsistencies in the categories, assuming that they have been applied uniformly to all the categories, will be balanced out because what we are measuring in this research is differences rather than absolute quantities.

3.5.7. Coding and Standardization Procedures.

The number of cohesive items occurring under the different sub-categories were counted and then calculated as a percentage of the number of items occurring in the particular category. This was done separately for each text. The average percentage was calculated for each corpus and weighted to allow for the different lengths of the different texts. The weighting factors are given

	A	B	C	D
Passage 1	0.7349	1.2153	0.8416	0.9730
Passage 2	1.7723	1.4660	0.9901	0.9189
Passage 3	0.8357	0.8621	1.1386	0.9189
Passage 4	0.7877	0.3076	1.0396	0.9730
Passage 5	0.7541	1.1926	1.0891	1.1892
Passage 6	1.0375	0.7900	1.1386	1.1892
Passage 7	1.1047	1.1242	1.1386	1.0811
Passage 8	0.9606	1.0976	0.9901	0.9189
Passage 9	0.9510	0.7672	0.7921	0.9189
Passage 10	1.0615	1.1774	0.8416	0.9189

FIGURE 3.4

The Weighting Factors Used

in Figure 3.4. Then the differences in the averages were sub-
jected to a 't' test to find out whether they were statistically
significant. The formula used to calculate the value of 't' was:

$$t = \frac{(X - X) \times V (N + N - 2) N N}{V (N o + N o)(N + N)}$$

Some of the results were also subjected to an 'F' test to see
whether the variances of each corpus were significantly different
from one another. This last procedure helps to indicate whether
there are further factors to be examined which are obscured by a
straightforward comparison of means. The results of the F test
will therefore only be discussed when the F test reveals a statis-
tically significant difference which is not picked up by the
't'-test. The value of F is the ratio of A/B or B/A, whichever is
the larger, where

$$A = o \times \frac{N}{N - 1} \qquad \text{and} \qquad B = o \times \frac{N}{N - 1}$$

As a refinement to the analysis of cohesion, and building
upon the later papers of R. Hasan (discussed in Section 2.3.1.1.5.
above), an analysis of the identity chains and similarity chains
found in Corpuses A and B was also carried out. No attempt was
made to do a similar analysis of Corpuses C and D because it was
felt that any additional information gained would not be worth the
effort involved. Much of what would be gained statistically is
gained more effectively by means of FSP analysis, which is
described below.

Finally, in an abortive attempt to investigate further any differences between English and Arabic in their underlying clause relations and the way they are signalled, a code was devised to indicate these. An outline of the code is as found below. The details will be given in Section 4.2.3.

```
1st and 2nd digits.  Clause relation type
3rd digit.  Level of clause relation, expressed in number of
                RC's thus blocked together.
4th digit.  Type of signalling of relation
5th digit.  Cataphoric commitment.
6th digit.  Anaphoric structural connection.
7th digit.  Type of expectancy.
```

The resulting codes are to be found in Appendices A-D enclosed in brackets following the RC's to which they refer.

3.6. The FSP Analysis.

The FSP analysis aims to explore some of the contrasting methods of text development used in Arabic and English. In particular, it explores the ways in which successive themes are related to the preceding verbal (and sometimes non-verbal) context, and the ways in which new participants and events are introduced into the text. It relates most specifically to Hypothesis Bviii (c.f. pp.9-10) but it can also be shown to relate to Hypothesis Bi (c.f. pp.6-7), in that the absence of diathemes is frequently a reflex of an absence of thematic complexity and clausal subordination, and Hypothesis Biii (c.f. p.7), in that this hypothesis would predict a large number of noun groups functioning as themes proper.

The analysis was carried out along the lines described in Svoboda 1983. The thematic elements occurring in the texts were found, and have been identified numerically in the appendices. Following the usual Prague School convention, the first digit indicates whether the element is 'Theme'(1), 'Transition' (2) or 'Rheme' (3). Theme is further divided between the four categories, 'theme proper' (11, unless it is a dummy theme - e.g. the existential 'there' and the impersonal 'it' - in which case it is marked 10), 'theme proper oriented theme' *(12)*, *'diatheme oriented theme'* (13), and 'diatheme' (14) according to the principles set out in Chapter 2. Transition is divided between the categories 'transition proper' (21) and 'rest of transition' (22); and rheme is divided into the categories 'rheme proper' (marked 32 unless there was more than one rheme, in which case the second digit would be increased appropriately), and 'rest of rheme' (which is marked 31 unless it was cataphoric with generic reference, or one of Winter's Vocabulary 3 items, in which case it was marked 30). All RC's will have a 'rheme proper' coded (32) except RC's or clauses within RC's acting simply (using Winter's terms) as 'signal sentences'. The 'rheme proper' in these RC's or clauses will be coded (30).

The exact method by which these FSP functions were ascribed to Rhematic Clause elements is described below. It should be noted that the status of these steps is not definitional but heuristic.

1. Decide whether or not the RC is a second instance one
    (c.f. Section 2.3.2.4.1. for a treatment of this con-
    cept). If it is, label the repeated elements or pro-
    forms 'Theme Proper' and the other element(s) 'Rheme
    Proper'. Then proceed to the analysis of the next RC.

2. Analyze the RC's in terms of their constituent structure.
    Where the subordination of a clause serves a focal or
    modal function, the subordinate clause is analyzed into
    its constituent structure as well as the matrix clause.
    Otherwise the subordinate clause is considered purely as
    a constituent of the matrix clauses and is not further
    analyzed. (This is not a reflection on the scope of FSP
    but is governed by the degree of delicacy that we are
    adopting here.)

3. Decide what function the RC performs within the text.
    Does it serve to introduce a new element onto the scene
    or does it serve to attribute a quality to a bearer. On
    the basis of this decision, give semantic labels to each
    RC group (c.f. Section 2.3.2.3.1. for the labelling to be
    used). Elements labelled 'Bearer' and 'Scene' whould be
    included within the thematic sphere. In deciding which
    function the RC performs, you have to decide what is the
    base of the information structure of each clause, that
    element by which you as the reader connect the new infor-
    mation contained in the RC to the networks of knowledge

that you have already formed, initially from the immedi-
ately preceding textual context, but if that fails from
the wider linguistic and extra-linguistic context. By
recourse to ever-widening contexts, this step allows the
possibility of 'new' themes. Include this element within
the thematic sphere. RC-initial adverbial elements are
always scenic, and RC-final elements are always specifi-
catory except where they are covered by Step 4 below.

4. Are there any elements not so far included within the
    thematic sphere which are derivable in terms of their
    reference, their semantic content and their case function
    (nuclear participant or circumstantial element), from the
    preceding context? Derivability of case function is
    important to cover those cases where the 'speaker's com-
    municative concern' overrides the referential derivabil-
    ity of an element (c.f. p.78 for further discussion of
    the 'speaker's communicative concern'). Include these
    elements within the thematic sphere.

5. Which element(s) provide(s) the connecting link between
    the base and the pinnacle of the informational structure
    of the RC? In the case of an existential clause, the
    pinnacle of the structure will be a phenomenon. In the
    case of an attributive clause, the pinnacle of the struc-
    ture will be a specification. Label these element(s) as
    transition.

6.   Label all other elements as part of the rheme. If there
     are no other elements, then the Predicate should be
     labelled 'Rheme' as well as 'Transition'.

Having established the thematic, transitional and rhematic
spheres, more delicate labels can be attached by applying the fol-
lowing tests:

A.   To label elements in the thematic sphere:

     1.   Does the thematic element fulfil one of the following
          functions:

          a. Is the element linking successive thematic spheres
              but functioning to maintain a certain item in the
              narrow scene (c.f. Section 2.3.2.4.2. for an
              explanation of this concept)?

          b. Is the element introducing information from the
              (preceding) rhematic sphere or the broad scene
              into the (following) thematic sphere?

          c. Is the element introducing new information (i.e.
              information not retrievable from the preceding
              linguistic context or the extra-linguistic con-
              text) directly into the thematic sphere of the RC?

     If the element fulfils any of these functions, include it
     within the diatheme. If there is more than one diathe-
     matic element, then the first one to occur is labelled
     'diatheme' (14) and the second one to occur is labelled
     'diatheme-oriented theme' (13). Discourse adjuncts are

conventionally considered diathematic, and might be called textual diathemes. They are, however, regarded as having less CD than ideational diathemes, whatever their position relative to the ideational diatheme.

2.   All other elements are included within the 'theme proper'. Where more than one theme proper element occurs, then the most 'scenic', the most derivable element is labelled 'theme proper' (11) and the other is labelled 'theme proper oriented theme' (12).

3.   Does the item have no referent? If this is the case, it is labelled dummy theme and coded (10).

B. To label elements in the rhematic sphere:

1.   Does the element have cataphoric reference or is it one of Winter's Vocabulary 3 items? If so, it is labelled 'dummy rheme' and coded (30).

2. a.   Does the element give a sense of textual complete-ness to the RC (c.f. pp.91-2 for a discussion of the meaning of 'completeness' assumed)?

   b.   Is it surpassed in importance by another rhematic element? This is usually governed by the principle of linear modification (c.f. Section 2.3.2.1. for a discussion of this principle).

If the answer to Q.a is Yes and the answers to Q.b is
No, then label the element 'rheme proper' (normally
given the code (32) unless there is more than one item
labelled as 'rest of rheme', in which case it is coded
(3n+1). Otherwise, label it 'rest of rheme' (31).

As regards the transitional elements, the TME's (c.f. Section
2.3.3.2. for a discussion of these) are labelled 'transition
proper' (21) and the lexical element of the verb is labelled 'rest
of transition' (22), unless the lexical element is rhematic in
which case there is no 'rest of transition'.

To show how this works in practice, I have worked through
Passages C1 and D9. These are to be found in Appendices G and H
respectively. No great difficulties were found. However, it may
be helpful to anyone seeking to replicate these results to discuss
some areas of difficulty discussed in the literature survey, which
have not been directly addressed so far in this section:

Retrievability (c.f. p.76 for a discussion of the problem).
For the purposes of this research, an item is considered to be
retrievable once it has been introduced into the text. This
is justified on the following grounds. Firstly, the texts we
are analyzing are either literary or academic and we can
therefore assume that the reader is being reasonably atten-
tive. Secondly, the texts that we are analyzing are suffi-
ciently short for us to ignore the vexed question of exactly
how quickly a particular entity fades from memory and there-
fore has to be reintroduced.

<u>Ambiquity</u> <u>of</u> <u>CD</u> <u>Distribution</u> (c.f. p.78). This problem is solved, at the risk of producing a slightly impoverished analysis, by first of all dividing the texts into units on the basis of pause (c.f. Section 3.4. above) and secondly by adopting the very formal mode of analysis described above. Alternative analyses may be achieved on the basis of alternative readings of the texts, or by using a slightly less formal mode of analysis.

<u>The</u> <u>Status</u> <u>of</u> <u>the</u> <u>Transition</u> On the basis of the discussion carried on in Section 2.3.3.2., it is assumed for the purposes of this analysis that the degree of CD carried by the transition proper is constant, on the interpersonal role it plays.

<u>Questions</u> (c.f. p.82). The handling of questions in FSP terms is still somewhat problematic. Is the question word (in the case of a 'wh' question) to be treated as modal or rhematic? In my discussion I argue that because of its modal function it cannot be regarded as 'rheme proper'. However, as I have in this research allowed for a more delicate treatment of rheme, there is no reason why questions words should not be treated as 'dummy rhemes' (code 30). Their function is very similar to that of Winter's Vocabulary 3 items, indicating as they do the precise piece of information required by the questioner. Three questions of this type occur in Passage D10:6-8. Yes/No questions raise theoretical problems as to the status of the Transition, but no analytical problems.

3.7. The Hypotheses Formalized.

In Chapter One I outlined two basic hypotheses, the first of which I swiftly divided into two to take account of the division between the levels of form and meaning. These three can be restated as follows:

Ai. Arabic uses repetition structure more than English.

Aii. The unmarked semantic relation in Arabic is the matching relation, while the unmarked semantic relation in English is the logical sequence relation.

B. Arabic is written to be spoken whereas English is written to be read.

In the rest of this section, I will examine each of these hypotheses in turn and seek to formalize them so as to make them amenable to formal linguistic examination.

Although it is susceptible of a more abstract interpretation (referring to repetition of functions), Hypothesis Ai can be formalized to state that Arabic repeats lexical items forming different elements of structure within a clause more frequently than does English. It will be tested by comparing the proportions (/total No. of lexical items) of items occurring under the category 'Repetition of Clause Structure' in the four corpuses. As is the case whenever the term is used in connection with the analysis in this thesis, the term 'proportion' refers to the number of items occurring in the category or sub-category expressed as a percentage of the number of items occurring in the immediately superordinate category (c.f. p.113 above). Thus, items occurring

under the categories of 'Repetition of Clause Structure' or 'Lexi-
cal Chain', for instance, are expressed as percentages of the
total number of lexical cohesive items, and the number of lexical
cohesive items occurring is expressed as a proportion of the total
number of cohesive items occurring, etc. Such an approach gives a
simple way of standardizing the figures involved, which introduces
no inaccuracy provided that one does not try to compare categories
dependent on different nodes (e.g. Modal Items with Lexical
Chains). Hypothesis Ai is thus tested in Section 4.1.2.3.4.

If one takes the term 'unmarked' to at least imply 'most com-
mon' and therefore 'expected', then Hypothesis Aii can be formal-
ized for the sake of measurability within the parameters of this
research to state that the matching relation is more common in
Arabic than in English, while the logical sequence relation is
more common in English than in Arabic. In other words, one would
expect Arabic to have a greater proportion (/total No. of connec-
tors) of items occurring within the 'additive' and 'adversative'
categories, while English has a greater proportion of items occur-
ring within the 'causal' and 'temporal' categories. This is
addressed in Section 4.1.2.2.

In order to test the third hypothesis, I chose the character-
ization of speech found in Ong 1982. If my hypothesis is correct,
then where he states the characteristics of speech, one should be
able to substitute the word 'Arabic' wherever he uses the word
'speech'. As we can assume that the written forms of all lan-

guages have traces of their oral origins, we are not saying that
Arabic has all the characteristics of speech whereas other lan-
guages do not have any of these characteristics, but rather that
Arabic displays these characteristics more markedly than some
other language. For the purposes of this research, I have chosen
English as the point of comparison. In the following paragraphs I
will restate the hypotheses substituting the word 'Arabic' for the
word 'speech' and suggest how they might be formalized in such a
way as to be tested, bearing in mind that we are taking a compara-
tive rather than an absolutist approach.

Bi.   Arabic is "additive rather than subordinative".

This can be formalized as follows: Arabic uses more coordina-
tive structures than does English. This hypothesis will be sup-
ported by showing that Arabic has a larger proportion (/total No.
of cohesive items) of instances of "wa" used cohesively than Eng-
lish does of 'and'. This is tested in Section 4.1.1.6. However,
when we try to go beyond this, we are faced with the problem of
the status of postposed subordinated/coordinated (?) clauses,
given the ambiguity of Arabic sentence divisions and the dual
function of Arabic connectors. The only clauses that are unambig-
uously subordinated in Arabic are those that are preposed, so our
hypothesis would be further supported by evidence that Arabic has
a smaller proportion of adverbial clausal elements coming in ini-
tial position than does English. This evidence is found in Sec-
tions 4.2.1.3.and 4.2.3.

Bii.   Arabic is "aggregative rather than analytic".

This can be formalized as implying that Arabic will display a greater proportion (/total No. of lexical cohesive items) of lexical strings than does English. This is discussed in Section 4.1.2.3.3.

Biii. Arabic contains much that is "redundant and copious".

This will be supported by showing that Arabic displays fewer cases of ellipsis (expressed as a proportion of the total No. of cohesive items), and uses more repetition, both of single words and of word groups (expressed as a proportion of the total No. of lexical cohesive items) than does English. The evidence for this is presented in Section 4.1.1.3. and Section 4.1.2.3. It might be supported by showing that Arabic displays a greater proportion of theme proper elements and a smaller proportion of diathematic elements (/total No. of thematic elements). The evidence for this is discussed in Sections 4.2.1.1., 4.2.1.2. and 4.2.1.4. The hypothesis might also be supported by showing that Arabic makes greater use of pronouns as head of the nominal group than does English. The evidence for this is discussed in Sections 4.1.1.1. and 4.1.2.1.

Biv.   Arabic is "close to the human lifeworld".

Assuming, as Ong does, that this means that all lists, inherited wisdom and argumentation are expressed through narrative structures, this could be tested by showing that Arabic uses the narrative form, whatever the text type, more than does English.

It might be supported by showing a greater proportion (/total No. of connectors) of temporal relations between clauses and a smaller proportion of causal relations (/total No. of connectors) than is the case in English. This is addressed in Section 4.1.2.2.

Bv.   Arabic is "agonistically tuned".

Given that this implies that Arabic writers seek to prove their assertions not by summoning up all sorts of logical arguments, but by presenting them repeatedly and beautifully and regarding them from different points of view, this hypothesis would be supported by evidence of a greater use of paraphrase in Arabic than in English and a greater use of diathemes functioning to keep information highlighted for the reader. The data relating to the use of paraphrase is dealt with briefly in Section 4.1.2.3. The textual function of the diatheme is discussed in Section 4.2.5.

Bvi.   Arabic is "empathetic and participatory rather than objectively distanced".

This will be supported by evidence of greater prominence being given to addresser and addressee in Arabic and in English, in other words the occurrence of a higher proportion (/total No. of cohesive items) of Modal Elements in Arabic than in English. This is discussed in Section 4.1.1.5.

Bvii. Arabic is "homeostatic".

This hypothesis cannot be tested in the context of this research. It could only be verified by a study of semantic change in Arabic.

Bviii. Arabic is "situational rather than abstract".

Given that this implies a high degree of thematic turbu-
lence in Arabic, this hypothesis would be supported by the
occurrence of a higher proportion (/total No. of diathemes) of
diathemes functioning to introduce new information from the
rhematic sphere into the thematic sphere. This is discussed in
Sections 4.2.4. and 4.2.5. It might also be supported by show-
ing that Arabic texts display a large quantity of short-lived
identity chains rather than a smaller number of longer-lived
ones. This is discussed in Section 4.1.2.4.

CHAPTER FOUR

THE ANALYSIS PERFORMED

4. Lay-out of Chapter.

This chapter divides neatly into two, Section 4.1 dealing with the analysis of cohesion, Section 4.2 with the FSP analysis. Because of the large number of tables involved, all tables have been moved to Appendix D, to which the reader is invited to refer. If text, to quote Michael Hoey, can be viewed as 'net, machine or dialogue', then in this presentation we are concerned with text as net, and just as a fisherman's net consists of a few lengths of cord running through it - tied together to make the squares - so our texts are held together by cords consisting mainly of the cohesive lexical elements in terms of cohesion, and the FSP thematic sphere. How these two behave will be our main focus in this chapter.

4.1. An Overview of the Analysis of Cohesion.

In Section 4.1.1., tables will be discussed which give an overview of the analysis of cohesion. Then in Section 4.1.2, the individual categories of cohesion will be examined in more detail.

4.1.1. The Overall Scores.

In Tables E.1, E.2, E.3 and E.4, the overall results of the cohesive analysis can be seen. The key to these tables is as follows:

    R. Reference
    S. Substitution
    E. Ellipsis
    C. Conjunction

L. Lexis
Mo. Modality
And/"wa"
Tot. Total

The rows represent the figures for each text in the cor-
pus followed by the totals for the whole corpus; the columns
give the results for particular cohesive categories, as
explained in the keys. In each box, the top number gives the
raw score, the bottom number that score expressed as a per-
centage of all the cohesive items occurring in that text. The
percentage therefore gives no idea of absolute scores but
shows instead the extent to which a text depends on that type
of cohesive item.

The totals at the foot of the tables give some idea of
the density of cohesive items in absolute terms. It will be
noted that Arabic Corpus B displays a far higher total of
cohesive items (532) than does English Corpus A (405). The
significance of this is increased by the fact that the total
number of lines in English Corpus A (159) is greater than
those in Arabic Corpus B (118). The number of cohesive items
per line in English Corpus A is 2.5, while the number per line
in Arabic Corpus B is 4.5. However, the writing systems and
graphological conventions of the two languages are so differ-
ent that the number of lines is perhaps not a sufficiently
accurate index of text length. When the number of cohesive
items is expressed as a function of the number of clauses in
each corpus (121 in Corpus A and 140 in Corpus B) then the
difference is reduced although not wiped out entirely. In

English Corpus A, the number of cohesive items per clause is 3.3, compared with 3.8 in Arabic Corpus B. In B, there are more items under the heads 'Conjunction', 'Modality', and "wa" than there are in A, whereas A shows slightly greater numbers under the heads 'Reference', 'Substitution' and 'Ellipsis'. When adjusted to take account of the differing totals, the number of occurrences of lexical cohesion is found to be the same in both corpuses. The difference in the absolute totals therefore seems to be due to the greater number of conjunctions used in Arabic corpus B as well as the very much higher use of modal items and 'wa'. The large totals under these heads do more than counterbalance the greater totals in English Corpus A under the heads 'reference', 'ellipsis', and 'substitution'.

Corpuses C and D are far more homogeneous in both length (202 and 185 clauses respectively) and text type, and contain similar numbers of cohesive items (853 and 862 respectively). They do, however, show considerable variation in the distribution of these items; but as these differences are in no way obscured by the conversion to percentages, I shall not discuss these differences in this section, but shall leave them to appear under their appropriate headings.

4.1.1.1. Reference.

Table E.5 gives the averages (1) and standard deviations for the reference items in Corpuses A, B, C, and D. The first vertical column gives the figures for Corpus A (top) and Corpus B (bottom). The second vertical column gives the figures for Corpus C (top) and Corpus D (bottom). The third vetical column gives the figures for Corpuses A and C combined (top) and Corpuses C and D combined (bottom). On the bottom line of the table, the results of a 't'-test are shown, giving the degree of statistical significance to be attached to the apparent differences. This shows the degree of possibility that the two samples could be taken from the same population (2)

Although, as remarked above, reference items in English Corpus A seem to be somewhat more numerous (116, 28.6%) than those appearing in Arabic Corpus B (99, 18.6%), these differences are only significant at the 0.3 level (i.e. there is a 30% possibility that the samples come from the same population). Moreover, when Corpuses C and D are compared (C=119, 14.0%; D=154, 17.9%), the positions are reversed. Arabic Corpus D seems to depend more on reference items for cohesion than Corpus B. When the combined totals are compared - A+C (Av.=22.0%) v B+D (Av.=17.4%) - there appears to be no signif-

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(1) Unless otherwise stated, all averages used in this thesis for statistical purposes are weighted to take into account the different lengths of the text samples.
(2) This layout will be used in all future tables of this sort.

icant difference whatsoever.

Thus at this level of generality, there appears to be no difference between English and Arabic in this area.

4.1.1.2. Substitution.

Table E.6 gives the averages, standard deviations, and degrees of significance for the substitution items found in Corpuses A, B, C and D. It does seem that English tends to use substitution more than Arabic. However, the significance of this is vitiated by the small number of instances in the corpuses.

Owing to the small number of instances, 'Substitution' will not be considered further in this thesis. Therefore, a list of the items encountered is given below, with a minimum of context (3):

   Corpus A.

   (4.1)   (a) (3) But with her politics were always an
             affair of the heart, (b) <u>as</u> indeed were all
             her convictions. (A2.6-7)

   (4.2)   (a) Those 75,000 soldiers, of whom Blair had
             talked, would not have been asked of the
             states if they had not been intended for
             early service in the field. (b) And if they
             were <u>so</u> intended .... (A4.5-6)

                    ----

   (3) Following Winter, I use the convention of indicat-
   ing the different members involved in a clause relation
   by the use of small case letters.

(4.3)   (a) No sooner were the first syllables
          uttered than the cry was taken up from other
          mosques in the quarter and a few seconds
          later by others farther away , (b) and <u>so</u> <u>on</u>
          into the distance. (A7.5-6)

Corpus C.

(4.4)   (a) Publicity was not then considered to be a
          responsibility of Government, and attempts to
          secure public support for policies formulated
          by the ruling elite was considered unneces-
          sary. (b) On rare occasions, <u>such</u> an attempt
          was made, ... (C4.2-4) (4.5)   (a) ... Dr
          Williams has commented ... Dr Challinor is
          aware ... He argues .... (b) From <u>such</u> incom-
          plete and partial analyses labour historians
          have been able ... (C8.8-14)

(4.6)   (a) There was in effect a three-cornered
          Anglo-Indian-American situation .... (b)
          This was particularly <u>so</u> in the area of the
          Ohio-Great Lakes-Mississippi triangle.

                                    .

Corpus B.

(4.7)   (a) wa Da:lika 'anna: nara:hum yatana:fasu:n
          fi: lmala:bis w 'a:Ta:Ti lmasa:kin w naHwiha:
          mina dduru:riya:t (b) wa <u>kaDa</u> l'asliHa wa
          sa:'iri llawa:zimi lHarbiya. (B5.7-8)

                                    .

(a) That is to say, we see them vying with
each other in clothes and furniture and other
necessities,(b) and <u>also</u> in weapons and other
essentials of war.

Corpus D

(4.8)   (a) wa qad 'iStamalat ha:Dihi lwaTa:'iq 9ala lmu-

Dakkira:t wa ddira:sa:ti llati ka:nat tu9idduha:

wizaratu lxa:rijiyya, (b) <u>wa kaDa</u> ttaqa:ri:ra llati

ka:nat tatalaqqa:ha: wiza:rat ... (D8.13-14)

(a) These documents included the memoranda and stud-
ies which the Foreign Ministry used to prepare, (b)
and <u>also</u> the despatches sent by the Ministry of ...

(4.9)   (a) wa min 'ahammiha: 'aydan 'attaqa:ri:ra llati

ka:nat tab9aT biha: sifa:ra:t bri:ta:niya fi: kulli

min ru:ma ... (b) <u>wa kaDa</u> ttaqa:ri:ra llati ba9aTa

biha: mumaTTilu: ...

(a) Amongst the most important again are the resolu-
tions sent by the British embassies in Rome and ...
(b) <u>also</u> the dispatches which were sent by her rep-
resentatives

The following points may be noted from this data:

i.   The variety of items contained in the English corpuses

as compared with those contained in the English texts.

The English contains the items 'as', 'so', 'and so on'

and 'such', whereas the Arabic corpuses contain only

"kaDa". This reflects the greater variety of substitu-

tion items available in English.

ii.   All the cases of substitution in the Arabic texts are

clausal in scope. This reflects the fact that the Ara-

bic adjective is more noun-like than the English and

therefore less in need of a substitute item to accom-
pany it.

iii.   Four out of ten of the items occurring in the English
texts form part of the second member of a 'matching'
clause relation, whereas all the Arabic ones so par-
take.

4.1.1.3. Ellipsis.

Table E.7 gives the averages, standard deviations, and
degrees of significance for the cases of ellipsis found in Cor-
puses A, B, C and D. Taking the data as a whole (cf. Column 3)
Arabic clearly prefers to avoid ellipsis; the difference is sig-
nificant at the 0.001 level. The low degree of significance shown
for the comparison between Corpuses A and B (0.1) is probably due
to the small number of instances and the variety of texts found in
both corpuses.

Although English tended to use ellipsis more frequently than
Arabic, yet still the number of cases instanced was small. There-
fore, further subdivision would be unprofitable. For this reason,
it is best at this point to give a few examples of the data, dis-
cuss them, and then move on. Ellipsis will not be commented on
further in later sections.

Corpus A (4)

(4.10)   (a) She had loved society, (b) 0 affecting a somewhat liberal role, and professing an emotional dislike to tyrants. (A2.2-3)

(4.11)   (a) He turned towards the city beyond the wall (b) and 0 raised his voice in the long wailing cry ... (A7.3-4)

(4.12)   (a) By the time the more distant cries started theman on the wall of the Jama Mosque had ceased and was descending the stone stairway to the court, (b) 0 the worshippers had left their ordered lines and were rolling up their mats and gathering around the water-tank, (c) and 0 my little teacher was ravenously taking meat cakes out of his packet of provisions and gulping them down. (A7.7-9)

(4.13)   (a) At recess one afternoon Jules Marchal jumped from a wall and hurt his arm. (b) Everyone *crowded round 0. (A9.2-3)*

(4.14)   (a) He stared at me briefly, then turned his head away wearily as if he had seen all he wanted. (b) I was dismissed 0. (A10.9-10)

----

(4) 0 indicates that an element has been ellipted.

Corpus C.

(4.15)   (a) Until approximately the First World War, for-
eign policy decisions were made in their own
largely self-contained and essentially European
diplomatic culture. (b) But the revolution in
communications and travel, and the discredit
earned by the old diplomacy after the war,
altered the context 0, bringing a growing number
of people into the process 0. (C2.2-3)

(4.16)   (a) Mission life was the focal point of Yorkshire
Catholicism, (b) and therefore 0 of primary
importance to this study. (C3.7-8)

(4.17)   (a) The field for official propaganda activity
remained narrow so long as effective public opin-
ion was restricted by low standards of literacy
and education, (b) and 0 until technology pro-
vided means for influencing that opinion other
than through the medium of a few newspapers.
(C4.9-10)

Corpus B.

(4.18)   (a) 'illa: 'anna lkala:m huna fi lfaqri llaDi la:
yuqa:l fi:hi 'annahu 9i:Sun mu'addin 'ila SSarh
wa lbatar. (b) la: 0 fi lfaqri lmidfa9u llaDi
yulqi: lhumu:ma 'dda:'ima fi: qalb sa:Hibihi.
(B1.3-4)

(a) However, we are talking here about poverty,
of which it cannot be said that it is a life
leading to ... (b) No 0. Poverty is the driving

force which throws continuous anxieties into the heart of its victim.

(4.19)   (a) azziwa:j Sarika fi:hi rrajul 9a:mil qawi:

xiSn li'annahu maxlu:q lil9ira:k wa zziHa:m, (b)

wa 0 lmar'a lati:fa naHi:fa 9amaluha: fi: manzil-

iha:.   (c) 0 al'awwal yaksib wa yaqu:m bi'awaddi

19a:'ila wa 0 TTa:niya tu9ti:hi ha:Dihi 19a:'ila.

(B3.8-10)

(a) Marriage is a company in which the man is the strong crude partner because he was made for sweat and toil, and (b) 0 the woman is gentle and tender looking after the home. (c) The first 0 supports the family with his earnings while the second (0) gives him this family.

(4.20)   (a) biha:Da nniza:m taqu:mu lmana:zil, (b) wa

'illa: 0 tanhadim. (B3.14-15)

(a) In this fashion homes are established, (b) if not 0 they break up.

(4.21)   (a) wa 9ala SSa:bbi 19arabi: 'an yanzur 0 bikulli

turu: wa hudu:', wa niza:ha fi lHukm wa safa: fi

DDihn ... (b) yanzur 'ila haDihi lmuSkila ...

(B6.11-12)

(a) The Arab youth must look very carefully and calmly, wisely and clear-headedly 0 ...   (b) look at this problem.

Corpus D.

(4.22) (a)   fajtaDabati   l'anza:r   wa   ta9allaqat

bi9a:simatiha: lqulu:b min kulli sawb wa Hadab,

(b) kullu 0 Hasb mu9taqadihi ... (D6.5-6)

(a) All attention was focussed on it, and the hearts of all men everywhere were enthralled by her, (b) all 0 according to his belief.

(4.23) (a) ha:Da wa qad marrat fatrat Hukm muHammad 9ali

fi: Sibhi ljazi:ra al9arabiya bimara:Hil 9idda

(b) wa salaka kullun min muHammad 9ali wa

ssulta:tu 19uTma:niya turuqan muxtalifa wa 'ara:d

kullu minhuma: 'an taku:n lahu ljawla wa 'an yaz-

fur binnati:ja (c) wa zda:dat al9ila:qa:t 0

tafa:quman (d) wasta9arat na:ru lxila:f 0 fi

SSa:m fi: 'iTna:' 'azmat taqaddum qu:wa:t

'ibra:hi:m al'u:la:. (D9.11-14)

(a) The period of Mohd Ali's rule over the Ara-
bian Peninsula passed through a number of stages
(b) and both Mohd Ali and the Ottoman authorities
pursued different courses, each trying to win the
round and gain the upper hand. (c) Relations
increased in tension and (d) the fire of conten-
tion 0 flared up in Syria during the crisis of
Mohd Ali's first advance.

It will be apparent from these examples that there are two

types of ellipsis exhibited in the corpuses. There are cases

where a structural and semantic gap is left (e.g. ex.4.11, 4.16,

4.18, 4.20, 4.22,) and there are cases where there is a semantic

gap but no structural gap (e.g. ex.4.12-15, 4.17, 4.19, 4.21).

Looked at in this way, the corpuses divide as shown in Table 4.1.

Whether or not one considers it valid to regard purely seman-

tic gaps as a form of ellipsis (c.f. Section 2.3.1.1.3 above), it

is clear that overall English still displays a greater dependency

upon ellipsis. It is noticeable, however, that when Corpuses A

and B are compared Arabic displays roughly the same amount of

structural ellipsis as English, while English displays considera-

	A	B	C	D
Str & Sem	4	5	13	3
Sem only	9	1	15	3

TABLE 4.1
Cases of Ellipsis divided according to
semantic and structural criteria.

bly more of the purely semantic type. This tends to confirm

Hypothesis Biii and will be taken up again in Chapter 5.

4.1.1.4. Conjunction and Lexis.

Tables E.8 and E.9 gives the averages, standard deviations,

and degrees of significance for the conjunctional and lexical

items respectively in Corpuses A, B, C, and D. There are no real

differences between the English and Arabic corpuses in the way

both these types of item are used. The great dependence on lexi-

cal items displayed by both languages highlights the basic lin-

guistic fact that it is lexis that provides the basic links in a

text, and it is as they relate to lexis that the other types of

cohesive item acquire their interpretation and their significance.

Both Conjunction and Lexis will be discussed in greater

detail in Section 4.1.2.2. and 4.1.2.3. respectively.

4.1.1.5. Modal Items.

Table E.10 gives the averages, standard deviations, and

degrees of significance for the modal expressions used in Corpuses

Table E.10 gives the averages, standard deviations, and degrees of significance for the modal expressions used in Corpuses A, B, C and D. There was a clear difference between Arabic and English usage although it fell just short of what one might call a compelling degree of significance (0.01).

This heading refers to cases where the writer overtly refers to himself or directly intrudes into the text or directly addresses the reader in the second person. It does not include cases where the writer refers to himself as a participant in the action of the text. Examples of the items included here are given below:

Corpus A.

(4.24)   Of reasoning from causes I think that she knew nothing. (A2.8)

(4.25)   Today we know that the elimination of the Pilt-down skull from the growing list of valid human fossils in no way affects the scientific accep-tance of the theory of evolution. (A3.1)

(4.26)   I do not mean to imply that Madame Vernet felt no personal sympathy for Jules, in this case, inci-dentally. (A9.12)

Corpus C.

(4.27)   The laity were, of course, the major element in the Church, and in considering their role both in the Church and in the non-Catholic community of

Yorkshire, <u>I</u> have emulated John Bossy, ...

(C3.9-10)

(4.28) <u>As</u> <u>we</u> <u>shall</u> <u>see</u>, the ideas developed about social

justice in Leeds in terms of the relationship

between the classes indicate that the conven-

tional stereotype of the 'one-dimensional' Victo-

rian mind calculating mechanically according to

the laissez-faire ideas of political economy is

not an entirely accurate one. (C5.17)

(4.29)   It is fourteen years since <u>I</u> was first introduced

to a confused, dirty, unsorted, largely unknown

set of archives. (C10.1)

(4.30) <u>So</u> <u>far</u> <u>as</u> I <u>am</u> <u>aware</u>, at the time of writing, no

modern definitive study of the entire diocese at

any period of its history is in existence other

than this all too brief work.

Corpus D.

(4.31)   (a) wa <u>lam</u> <u>'alzim</u> <u>nafsi</u>: bi9a:mil mu9ayyan mina

19awa:mili lmutaHakkima fi: tafsi:ri l'aHda:Ti

tta'ri:xiyya (b) bal 'inna tta9addud fi ttafsi:r

huwa <u>manhaji</u>: (D1.12-13)

(a) <u>I</u> <u>will</u> <u>not</u> <u>confine</u> <u>myself</u> to just one of the
factors influencing the explanation of historical
events (b) but rather I am following a multi-
pronged approach.

(4.32)   fa 'iDa <u>9alimna</u>: 'anna 19asra 19uTma:ni: min

'afqari 19usu:r buHu:Tan wa mu'allafa:tin fi:

maktaba:tina: 19arabiya lHadi:Ta lamasna: mada:

Ha:jatina: 'ila kulli baHTin yuqaddim lana:

Haqa:'iq 9an ha:Da 19asr, wa laqad ra'aytu

tiwa:la ssanawa:ti ssab9 alma:diya 'iba:n baHTi:

fi dawri lwaTa:'iq wa lkutub bilqa:hira 'iht-

ima:man 9azi:man tubdi:hi qillatu lba:HiTi:na

lmisriyyi:n fi: ta'ri:x misr 'iba:na lHukmi

19uTma:ni: (D2.7-8)

When we know that the Ottoman period is one of
the most impoverished in terms of research papers
and books in our contemporary Arabic libraries,
we can realize the extent of our need *of every*
piece of research that brings us truths about
this period, and I have seen during the past
seven years that I have spent in the Manuscript
Section of the Cairo Library the great attention
that a small minority of our Egyptian researchers
devote to the history of Egypt during the Ottoman
period.

(4.33)   wa min xila:l ha:Da 19anwa:n nafsihi sa'uHa:wil

           'istixla:sa 19awa:mili llati HadaTat bi: li'ix-

           tiya:rihi   mawdu:9an   lirisa:lati   dduktu:ra:

           (D3.2)

           Through this very title, I shall seek to summa-
           rize the factors that led me to choose this as
           the subject of my Ph.D. dissertation.

(4.34)   wa law la: wuju:da l'ama:kini lmuqaddasa

           bi'iqli:mi lHija:z lama: 9a:da laha: bayna

           19a:lami:n Dikr, 'alla:humma: 'illa: biqadri ma:

           laha: min mawqi9i stra:ti:ji: wa tawassutiha:

           bayna 19a:lam qadi:mihi wa Hadi:Tihi (D6.13)

> If it was not for the presence of the holy places in the Hijaz region, this region would have passed into absolute oblivion. By Jove yes, if it had not been for its strategic position both geographically and between the old and the new,
> ...

Corpus B.

(4.35)   wa   liDa:lika   fa   kaTi:ran   ma   <u>tara:</u>   Sa:bban

jami:lan qad tazawwaj nasfan Sawha:'   (B1.10)

For this reason <u>you</u> often <u>see</u> a handsome lad marrying an ugly ...

(4.36)   fa   <u>satas'alni:</u>   kayf   'intaha: <u>bi:</u>   albaHT   'ila

ha:Dihi nnazriyya lxatara   (B2.2)

<u>You</u> <u>will</u> <u>ask</u> <u>me</u> how my research brought me to this dangerous position.

(4.37)   wa   <u>naHnu</u>   l'a:n   tuja:h   mas'ala   kubra: (B3.2)

<u>We</u> are now face to face with a bigger question

Formally speaking, these items all function on the interpersonal level. They include three types of item:

i.   First and second person pronouns not functioning as

actors acting upon other participants within the text -

although they may function as actors acting on the text

itself or on the reader of the text. Generally they

function as the subjects of mental, verbal or relational

processes - acting in Hallidayan terms as sensers, say-

ers or identifiers).

ii.   Interjections, which are found only in Arabic. (cf.

4.35)

iii.   Modal expressions proper, of which there are only one,

which is found in the Arabic Corpus. (cf. 4.37)

iv.   Rhetorical questions, which again are most common in

the Arabic texts. (cf. 4.36)

Although the statistical significance of these differences is

not sufficient to build a cast iron case on, it does seem clear

that Arabic uses these expressions more than English does. Some

may argue that some of these expressions are used to mediate the

subject of the sentence. However, this does not explain the

occurrence of other types of modal expression. More likely is the

conclusion that it is still customary when writing in Arabic to

maintain a more personal relationship between the writer and the

reader, characteristic of the pre-printing era. This would tend

to support Hypotheses Bv. and Bvi.

4.1.1.6. 'And' and "wa".

Table E.11 gives the averages, standard deviations and

degrees of significance for 'and' and "wa" respectively in Cor-

puses A, B, C, and D. They are separated from other conjunctive

items because "wa" is not really a conjunctive item in the sense

that other Arabic conjunctions are. Cantarino (Cantarino 1974/5,

Vol. 3, p.11) states that " "wa" is the most generally used con-

junctive particle. It connects sentences without implying any

closer or more logical relationship". Beeston (Beeston 1973,

p.170) goes so far as to suggest that from Abbasid up until modern

times "wa" was inserted to indicate that a link was coordinate

rather than subordinate. This was in reaction to the fact that

asyndetic linkage was characteristic of the relative clause with

an indefinite antecedent and the circumstantial clause. In this

way "wa" has been until recently and still is to a large extent a

'quasi-punctuation device'.

On the other hand, its use does most definitely overlap with

that of the English connector 'and' and therefore for the sake of

consistency the English coordinator 'and' has to be removed from

the list of conjunctions as well.

The figures in Table E.11 clearly show the way Arabic uses

"wa" far more frequently than English does 'and'. This would tend

to support Hypothesis Bi.

A few examples are given here to show typical usage:

Corpus A.

(4.38)   (a) As long as the connection subsists between

his reason and his self-love, his opinions and

his passions will have a reciprocal influence on

each other; (b) <u>and</u> the former will be objects to

which   the   latter   will   attach   themselves.

(A5.3-4)

(4.39)   (a) Those 75,000 soldiers, of whom Blair had

talked, would not have been asked of the States

if they had not been intended for early service

in the field. <u>And</u> if they were so intended, Lee,

as an officer of the army, might be called upon

immediately for duty he could not conscientiously

perform. (A4.5-6)

Corpus C.

(4.40)   (a) In 1939 the Allies went to war in defence of

western civilization (b) <u>and</u> afterwards divided

into two ideologically separate blocks. (C2.8-9)

(4.41)   (a) Mission life was the focal point of Yorkshire

Catholicism, (b) <u>and</u> therefore of prime impor-

tance for this study. (C3.7-8)

Corpus B.

(4.42)   (a) na9am la: yunkar 'annna wuju:da lgani: wa

lfaqi:r fi ddunya: la: budda minhu kawuju:di

ljami:l wa lqabi:H. (b) <u>wa</u> law la: Dalik

lawaqafa lkawn 9ani lHaraka wa ta9attalat

almasa:liH kama: 'afa:dahu lmutakallimu:n.

(B1.1-2)

(a) No, it cannot be denied that the presence of
rich and poor in the world is inevitable, like
the presence of the beautiful and the ugly. <u>And</u>
if it was not for this, the universe would stand
still and ...

(4.43)   (a) S1 ... S2 ... S3 ... Sn (b) <u>wa</u> ha:Dihi lma-

baHiTu llati 'aSartu 'ilayha: satantahi kulluha:

'ila tilka nnazriya allati qaddamtuha:: (c) wa

hiya 'anna lkuTra lmutlaqa mimma: nusammi:hi

SSa9ra lja:hili: laysat mini SSa9ri lja:hili: fi:

Say'. (B2.1...10 - 11 - 12)

(a) sl ... S2 ... S3 ... Sn (b) <u>And</u> these inves-
tigations which I have indicated all lead to that
position which I have presented : (c) and that is
that the vast majority of what we call 'Jahiliya'
poetry is not 'Jahiliya' poetry at all.

What is perhaps worth further study is the types of semantic

relations associated with the use of "wa" and 'and'. Does the

considerable use of "wa" in Arabic indicate a proportionately

greater use of the loose additive relationship? This will be pur-

sued in Chapter 5.

4.1.2.   A more detailed analysis of selected aspects of the

Cohesive Items.

4.1.2.1. Reference items considered in more detail.

Tables E.12 and E.13 give the frequency of different types of

reference items used in the corpuses.

The column R1 includes pronouns other than those listed under

the heading 'Modal'. R2 includes the definite article and the

deictics 'this', 'that', 'these' and 'those' and their equivalents

in Arabic. R3 refers to lexical items which depend on an earlier

word for their point of comparison. In counting pronouns, when

more than one pronoun in one RC referred to the same entity, they

were only considered as one reference item.

Table E.14 gives the averages, standard deviations, and

degrees of significance for the different types of reference items

used in Corpuses A, B, C and D. Whereas there is no significant

difference between the patterns of usage displayed by Corpuses A

and B, there is a very significant difference between Corpuses C
and D (0.001). The first explanation I came up with was that this
result reflects the intensive use in technical English of complex
nominal expressions. To test this hypothesis, pronominal items
were divided according to syntactic criteria, on the one hand
according to whether or not they were the head of their noun
phrase, and on the other according to whether their noun phrase
filled the subject, complement or adjunct slot, or was itself an
element within a subordinate clause. The results of this analysis
are shown in Table E.15. What is striking about this table is how
similar are the patterns of usage of pronouns displayed by the two
languages. It is just that Arabic seems to make far greater use
of pronouns than English. Moreover, it needs to be remembered
that pronouns used modally (c.f. Section 4.1.1.6. above) have not
been included in the figures discussed in this section. This sug-
gests that the thematic layer of the Arabic sentence is lighter
informationally speaking than the thematic layer of the English
sentence in this text type.

Moreover, results of F tests carried out to compare the stan-
dard deviations of Corpuses A and B, and AC and BD showed a sig-
nificantly higher (F for A v B = 3.4048, significance = 0.05; F
for AC v BD = 2.7504, significance = 0.05) degree of variation in
the English texts than in the Arabic. This suggests that there
are additional factors at work here which are outside the scope of
this thesis. It may reflect a greater variety of text types in
Corpus A than in Corpus B, with Corpus A containing more exposi-

tory texts than Corpus B, or alternatively more thematic pattern-
ing of the type T1-R1, TR1-R2, TR2-R3, which some would argue is
characteristic of argumentative texts.

4.1.2.2.   Conjunction: Analysis according to a Modified Halli-
**   dayan Approach.**

Tables E.16, E.17, E.18 and E.19 show the items used in the
various corpuses under the various heads. C1 stands for Halli-
day's additive relation, C2 for his adversative relation, C3 for
his causal relation, and C4 for his temporal relation.

No significant differences between the corpuses were found in
the use of either additive or temporal conjunctive items. How-
ever, significant differences were found in the use of adversative
and causal items. The results of 't'-tests carried out on both
these categories are given in Tables E.20 and E.21. In the case
of adversative items (C2), significant differences were found
between the Arabic and English corpuses both individually (signif-
icant at 0.05) and collectively (significant at 0.01). In the
case of causal items (C3), no significant difference was found in
usage between Corpuses C and D, but a significant difference was
found in usage between Corpuses A and B (0.05). Combined, the
usage in the Arabic Corpuses was found to be significantly differ-
ent from the usage in the English corpuses.

The analysis of the adversative items shows that Arabic uses
a significantly higher proportion of adversative items than Eng-
lish. This could either be due to the fact that English uses the

adversative relation more frequently than Arabic, or that English finds it more necessary to signal the adversative relation overtly. In the light of the analysis contained in the next section, I favour the latter view. This will be discussed at greater length in Chapter 5.

The analysis of the causal items shows that Arabic uses a significantly higher proportion of causal items than English. Again this could either be due to the fact that Arabic uses the causal relationship more frequently than English (which seems rather counter-intuitive) or that Arabic finds it more necessary to signal this relation than English. Again, in the light of the analysis contained in the next section, I favour the latter view.

More detailed discussion will follow. For the moment it is sufficient to observe that the adversative relation is subsumed under Winter's Matching Relation (c.f. Section 2.3.1.2.1.) and the causal relation is subsumed under Winter's Logical Sequence Relation. If one accepts the possibility that the unmarked clause relationship in English is that of Logical Sequence while the unmarked clause relation in Arabic is that of Matching - as indicated by the Arabic love of parallelism and repetition, well documented in the literature - e.g. Al-Jubouri 1984 and Koch 1982 (the latter being discussed in Section 2.3.1.2.2. - then it immediately becomes apparent why Arabic should find it more necessary to mark the causal relation while English finds it more necessary to mark the adversative relation. More convincing evidence of this

would be obtained by counting the number of Adversative and Causal

relations occurring in each of the corpuses and then calculating

what proportion of them are marked by a conjunction or what Winter

would call a Vocabulary 3 item. This was attempted by using a

rather elaborate code the details of which are given below, the

micro-relations being divided into groups according to Halliday's

less delicate divisions as set out in Halliday 1985:

      1st and 2nd Digits.   Clause Relation Type. (modified from
                                      Longacre 1976 for clause relations
                                      and Hoey 1983 for macro-relations)

Extension:
    00   Coupling.
    01   Similarity, contrast and comparison.
    02   Alternation.

Enhancement:
    03   Temporal.
    04   Conditional.
    05   Contrafactual.
    06   Causation/Grounds for evaluation.

Elaboration:
    07   Paraphrase.
    08   Illustration.

Textual:
    09   Orientation.

Projection:
    10   Attribution.

Macro-relations:
    11   Situation.
    12   Problem.
    13   Solution.
    14   Evaluation.
    15   Response.
    16   Signal sentence.
    17   Attitude.
    18   Aim/Conclusions.
    19   Scope/Limitations.
    20   Background.
    21   Current research position.
    22   Presuppositions, method.
    23   Significance of/reason for research.

3rd Digit.   Level of clause relation, in terms of number of
                  RC's encompassed by the relation.

4th Digit.   Type of Signalling of Clause Relation referred
                  to by first two digits.

    1   Implicit.
    2   Preposition, conjunction.
    3   Conjunct.
    4   Cohesive clause.
    5   Winter's Vocabulary 3.

5th Digit.   Cataphoric Commitment, method of achieving the
                  same.

    0   Not applicable.
    1   Rhetorical question.
    2   Negation.
    3   Cataphoric use of Pronoun.
    4   Winter's Vocabulary 3 or noun used generally.
    5   Nuclear participant missing from case frame of verb
             used in RC.
    6   Structural.
    7   Thesis requiring substantiation.

6th Digit.   Structural connection with immediately preceding
                  RC.

    1   Present.
    2   Absent.

7th Digit. Type of Expectancy.

1   According to Expectations.
2   Contrary to Expectations.

        This code has considerable possibilities for research but as
I discovered no significant differences between the English and
Arabic corpuses, I did not pursue this avenue further. As stated
in the introduction, more research needs to be done into the

details of the clause relation signalling systems of Arabic before

a revealing contrastive study can be done in this area.

Tables E.22-25 show the results of my investigations in this

area. Columns 1-3 cover what Winter would call Matching relations

(01, 02, 07, and 08). Columns 4-6 cover what he would call Log-

ical Sequence relations (03, 04, 05, 06, 09, 10); and Columns 7-9

cover Hoey's macro-relations (11-23) and the 'coupling relation'

(00). The coupling relation is included as a macro-relation

because it is more distant than the macro-relations described

above. Columns 1, 4, and 7 indicate implicit relations (xxx1).

Columns 2, 5, and 8 indicate relations signalled by prepositions,

conjunctions and conjuncts; and Columns 3, 6, and 9 indicate rela-

tions signalled lexically. Clause relations of the matching type

remain unsignalled in the majority of cases in both English and

Arabic, and contrary to our hypothesis, Arabic seems to signal

clause relations of this type by means of conjuncts or conjunc-

tions more frequently than English.

In the case of Logical Sequence Relations, Corpus A has a

greater proportion signalled implicitly than Corpus B, while Cor-

pus D has a greater proportion signalled implicitly than Corpus C,

while the converse in true in the case of relations signalled by

conjuncts or conjunctions. Cases of purely lexical signalling of

either matching or logical sequence relations are negligible. In

no case are any of the differences in this or the above paragraph

statistically significant.

That avenue proving inconclusive, let us try another. Holes
1984 suggests an alternative approach. He makes the following
observation concerning Arabic. Pay particular attention to the
sentence which I have underlined.

> "It is arguable that the single most widespread
> problem that advanced Arab students of English face is
> the English punctuation system. Until quite recently,
> Arabic prose was neither punctuated nor paragraphed in
> any way comparable to European convention. The bound-
> aries of meaning groups were signalled by a small num-
> ber of conjunctive particles, each of which has a wide
> variety of functions. The tendency of many modern
> Arab writers, despite the introduction of the comma
> and the full stop (for both of which consistent pat-
> terns of use have yet to be established) is still to
> pile clause upon clause, separating them only by "wa"
> or "fa". "wa" can mark temporal sequence, simultane-
> ous action, semantic contrast and semantic equiva-
> lence, amongst other things; "fa" can be a marker of
> temporal sequence, logical consequence, purpose,
> result or concession. A recent commentary article of
> about 350 words by the veteran writer Mustapha Amin
> consisted of one 'sentence' of about thirty clauses,
> all linked together by "wa" and "fa". Arabic writers
> often write in this way, relying on their reader's
> appreciation of text pragmatics to supply an appropri-
> ate interpretation to these all-purpose connectors."
> (Holes 1984, p.234)

To test this observation, let us examine the conjuncts and
conjunctions used in the different corpuses. Tables 4.2-5 show
the results of this analysis.

It appears that the total number of conjuncts used in the two
languages varies only minimally. However, the number of conjunc-
tions used with multiple functions is consistently larger in the
Arabic corpuses than in the English ones. When the numbers of
tokens are compared, the differences are even more marked. We

CORPUS A

Additive		Adversative		Causative		Temporal	
But	x1	but	x10	Then	x2	then	x1
also	x3	In fact	x1	that	x1	Presently	x1
in as much as	x1	Yet	x1	Thus	x1		
incidentally	x1	by contrast	x1	so that	x1		
		all the same	x1	for	x1		
		rather	x1				
		though	x1				

	Additive	Adversative	Causative	Temporal	Total
4 items, 6 tokens		7 items, 16 tokens	5 items, 6 tokens	2 items, 2 tokens	
Items with 2 functions	1	1	1	1	4
Tokens	1	10	2	1	14
Items with 3 functions	0	0	0	0	0
Tokens	0	0	0	0	0

TABLE 4.2

CORPUS B

fa	x8	'illa 'anna	x1	fa	x13	Tumma	x5
'ayy	x1	ma9a 'anna	x1	liDa:lika	x1	Hayna'iDin	x2
bal	x1	wa 'in	x1	li'anna	x3	9andaha:	x1
Da:lika	x1	wa la:kin	x2	li	x1	ba9da qali:l	x1
kama:	x1	9ala 'an	x1			fa	x2
		əlHa:l 'an	x1				
		wa 'innama:	x1				
		fa	x1				

					Total
5 items, 12 tokens	8 items, 9 tokens	4 items, 18 tokens	5 items, 11 tokens		
Items with 2 functions	1	1	1	2	5
Tokens	8	1	13	7	29
Items with 3 functions	1	1	1	1	4
Tokens	8	1	13	2	24
Items with 4 functions	1	1	1	1	4
	8	1	13	2	24

TABLE 4.3

CORPUS C

Additive		Adversative		Causative		Temporal	
Furthermore	x1	Yet	x1	Hence	x2	when	x1
also	x6	but	x11	therefore	x3	afterwards	x2
too	x1	However	x4	thus	x1	while	x1
as	x2	though	x2				
At the same		while	x1				
time	x1	whereas	x1				
In particular	x1	except	x1				
Similarly	x1						
but ·	x1						
nor	x1						

9 items, 15 tokens	7 items, 21 tokens	3 items, 6 tokens	3 items, 4 tokens	Total
Items with 2 functions 3	3	0	1	7
Tokens 4	3	0	1	8
Items with 3 functions 0	0	0	0	0
Tokens 0	0	0	0	0

TABLE 4.4

CORPUS D

'ayy	x1	fa	x1	li'anna	x1	HayT	x3
kama:	x3	bal	x1	fa	x6	fi lwaqt	x1
fa	x12	baynama:	x1	xassatan wa	x1	Tumma	x2
bal	x2	bayda 'an	x1	'iD 'anna	x1	'iD	x1
kaDa:lika	x1	ğayr 'an	x1	HayT	x1		
HayT	x1	'illa 'an	x1				
		raĞm 'an	x1				
		wa la:kin	x5				

6 items, 20 tokens	8 items, 12 tokens	5 items, 10 tokens	4 items, 7 tokens	Total
Items with 2 functions 3	2	3	3	11
Tokens 15	2	8	6	31
Items with 3 functions 2	1	2	1	6
Tokens 13	1	7	3	24

TABLE 4.5

thus conclude that Holes is wrong in asserting that "the meaning
groups were signalled by a small group of conjunctive particles"
but right in observing that a considerable number of Arabic con-
junctive particles have "a wide variety of functions", and that
they are very commonly used. Moreover, this variety or flexibil-
ity of function would seem to be contagious within the conjunctive
particle system of Arabic, so that other particles have their
range of functions extended more readily than in English.

4.1.2.3. Lexis.

Tables E.26-29 show the distribution of various types of lex-
ical item in the corpus. For lack of space each table has had to
be divided into two parts, labelled 'a' and 'b'. The key to these
tables follows below:

L1. Same Item
L2. Synonym or near synonym
L3. Hyponym or meronym (including items in frame or schema)
L4. Superordinate (covering all cases of the opposite of L3)
L5. General Item
L6. Co-hyponym or co-meronym
L7. Lexical connector, i.e. a word of the type indicated by
     Winter's Vocabulary 3.
L8. Formal paradigmatic relationship not otherwise covered.
L9. Semantic paradigmatic relationship not otherwise cov-
     ered.
L10. Interpersonal similarity
L11. Antonymy
L12. Lexical chain
L13. Repetition of clause structure
L14. Paraphrase of clause

The system of categorization used is based on that of Halli-
day and Hassan 1974 and modified in the light of Hassan 1979 and
1983, and with other modifications added to focus on areas of
probable difference between Arabic and English. Examples of the

types of item covered by each sub-category will be given in the appropriate section below.

It is perhaps in order to repeat what I said in Section 3.5.4. concerning the relationship between catgories L1, L12, and L13. Cases of repetition of one word only are classified under L1. Cases of repetition of more than one word within the group are classified under L12, and cases of repetition of groups within the clause are classified under L13.

It will be recalled that no significant difference was found between the corpuses as regarding the total number of lexical items used cohesively. It is also the case that no significant differences were found in the categories L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, and L14. However, the corpuses do show significant differences of distribution between sub-categories 2, 12 and 13. Sub-category 1 will also be discussed briefly as it is germane to our purposes in this section.

4.1.2.3.1. Repetition of the Same Item (L1)

Examples occurring in this sub-category (The RC's linked by the cohesive tie are given after each example):

    (4.44)   (a) opinions ... (b) opinions   (A5.2-3)

    (4.45)   (a) kita:ba .. kita:bi: .. (b) alkita:b   (B4.1-2)

    (4.46)   (a) reformation .. (b) reformation   (C1.1-2)

    (4.47)   (a) al muHa:wala:t ... (b) muHa:wala   (D7.5-10)

No significant differences were found under this heading. However, this is readily explicable by the fact that lexical strings, comprising cases where strings of more than one identical item are repeated (L12), are not counted under this category at all.

4.1.2.3.2. Use of a Synonym or Near-Synonym. (L2)

Examples:

(4.48)   (a) cry ... (b) call   (A7.5-6)

(4.49)   (a) bila:d ... (b) ad-dawla   (B8.3-11)

(4.50)   (a) national advertisement ... (b) propaganda
          (C2.10-16)

(4.51)   (a) ṣaHa: ... (b) qa:m   (D7.5-10)

English Corpus C shows a significantly larger proportion of synonym usage than Arabic Corpus D (Average for C=10.1; Average for D=3.5, Significance=0.01). However, this is not reflected in Corpuses A and B, where the proportions seem to be much closer. Nevertheless, when Corpuses A and C are compared with Corpuses B and D, the difference remains significant at the 0.01 level. Table E.30 gives the results of a 't'-test carried out on these results.

These results are in line with the observation that in English lexical repetition is regarded as at best an adornment and at worst a symptom of repetitiveness. The corollary of avoiding repetition is the increased use of synonyms.

4.1.2.3.3. Lexical Strings (L12)

This category covers cases where a string of two or more words are repeated. Examples are as follows:

(4.52)   (a) exact science ... (b) exact science   (A1.4-5)

(4.53)   (a) alfarq bayn Haqi:qati ddi:n wa bayn mazharihi ...

          (b) alfarq bayn Haqi:qati ddi:n wa za:hiri ddi:n

          (B6.1-3)

(4.54)   (a) foreign policy ... (b) foreign policy   (C7.9-11)

(4.55)   (a) assafi:r albri:ta:ni: ... (b)   assafi:r

          albri:ta:ni: (D5.3-9)

When expressed as a proportion of the total number of cohesive items, the number of lexical strings used cohesively in Arabic greatly exceeds the number used in English (Average for A=2.9%, Average for B=9.2%, Average for C=6.5%, Average for D=14.0%). When the corpuses are compared separately, they show differences significant at the 0.05 level, and when the corpuses are combined the significance goes up to 0.01. Table E.30 gives the results of a 't'-test carried out on these figures.

These results show that the Arabic of which these corpuses are representative do favour lexical strings as a cohesive device far more than English. Once again, this gives statistical backing to the observations concerning the place of repetition in Arabic and lend support to Hypothesis Bii. It is true that a number of these lexical strings are proper names which it would be unnatural to abbreviate. However, we can assume that this constraint is the

same in both languages and this source of distortion will disap-
pear when we compare differences.

4.1.2.3.4. Repetition of Clause Structure. (L13)

This category includes cases where not just lexical strings
but elements of clause structure are repeated. Examples are:

(4.56)   (a) Those 75,000 soldiers, of whom Blair had talked,

would not have been asked of the states <u>if</u> <u>they</u> <u>had</u>

<u>not</u> <u>been</u> <u>intended</u> <u>for</u> <u>early</u> <u>service</u> <u>in</u> <u>the</u> <u>field</u>. (b)

<u>And</u> <u>if</u> <u>they</u> <u>were</u> <u>so</u> <u>intended</u>, Lee, as an officer of

the army, might be called upon immediately for duty he

could not conscientiously perform.   (A4.5-6) (4.57)

(a) wa fi: sununi lmuhtaddi:n lil9ila:ma aSSayx ...

ma: nassahu 'an ... (b) wa fi: Ha:Siyati dda:ri

lmuxta:r liSSayx ... ma: nassahu 'an (B5.1-4)

(a) In the traditions of Sheikh ... it is recorded
that ... (b) and in the margin of Sheikh ...'s Dar
ul-Mukhta:r it is recorded that ...

(4.58)   (a) It is a truism that "The well-being of workers

<u>depends</u> <u>on</u> <u>many</u> <u>things</u> <u>beside</u> their financial circum-

stances, (b) and the latter <u>depends</u> <u>on</u> <u>many</u> <u>things</u>

<u>besides</u> <u>wages</u>. (C8.15-16)

(4.59)   (a) fal9asru lmamlu:ki: wa huwa lmaja:lu zzamani:

lirrisa:la yaHtall maka:nan ba:rizan ... (b) wa misr

hiya lmaja:lu lmuka:fi lirrisa:la ... (D3.4-8)

(a) The Mamluk era, which is the temporal background
to this thesis, occupies a distinguished place ... (b)
and Egypt is the stage for this thesis ...

As in the case of lexical strings, Arabic seems to have a greater proportion of cases of clause structure repetition (Average for A=6.6%, Average for B=12.3%, Average for C=1.0%, Average for D=4.4%). Although when Corpuses A and B are contrasted the difference only reaches the 0.3 level of significance, this seems to be due to some factors out of reach of this study, as indicated by the results of the F test (F = 4.4834, significance = 0.05) However, when Corpuses C and D are compared, the degree of significance is 0.05. When A and C are compared with C and D, the degree of significance reaches 0.01. Table E.32 gives the results of a 't'-test carried out on these results.

The surprising number of cases of clause structure repetition in English Corpus A is probably due to the fact that the English texts in this corpus are often rhetorical in nature. Take, for example, Clauses A1.1-2:

(4.60) (a) Whenever the enlightened reformers expect the crowd to choose Christ, it cheers for Barabbas. (b) Whenever some Weimar Republic gets rid of some old monarchy, the liberated crowd turns its republic over to some Hitler.

Here we have the juxtapostion of two conditional clauses introduced by 'whenever', the repetition of the subject 'crowd' (although in (a) it is the subject of an embedded clause), and the juxtaposition of two unexpected choices, in the first case of evil rather than good and in the second of (again evil) enslavement rather than (presumably good) liberty. This elaborate repetition structure in English is ornamental and clearly marks the passage as rhetorical.

4.1.2.4. Identity Chains.

As a continuation of the effort to identify patterns of cohe-
sion and text development, the identity chains occurring in texts
A and B were analyzed and the results of this analysis are shown
in Tables E.33-34. No attempt was made to calculate percentages
or to do any statistical work on them. However, a clear tendency
appears and this is illustrated graphically in Table 4.6. The
table shows clearly that in the corpuses under consideration,
short-lived identity chains tend to be more numerous in the Arabic
than in the English texts, while longer-lived chains are slightly
more numerous in the English than in the Arabic texts. This is
reinforced by the fact that English Corpus A had thirteen identity
chains in which ten items were partaking, while Arabic Corpus B
had only four. It is difficult to decide whether this reflects
text-typological differences between the corpuses or whether it
reflects something significant about the structure of Arabic text.
In all events this observation will be taken up again in Section
4.2.4.

4.1.3. Conclusion.

We may conclude this section by observing that on the two
levels of lexis and structure, Arabic favours repetition far more
than English. It is not just ornamental in Arabic but essential
to the cohesion of the text.
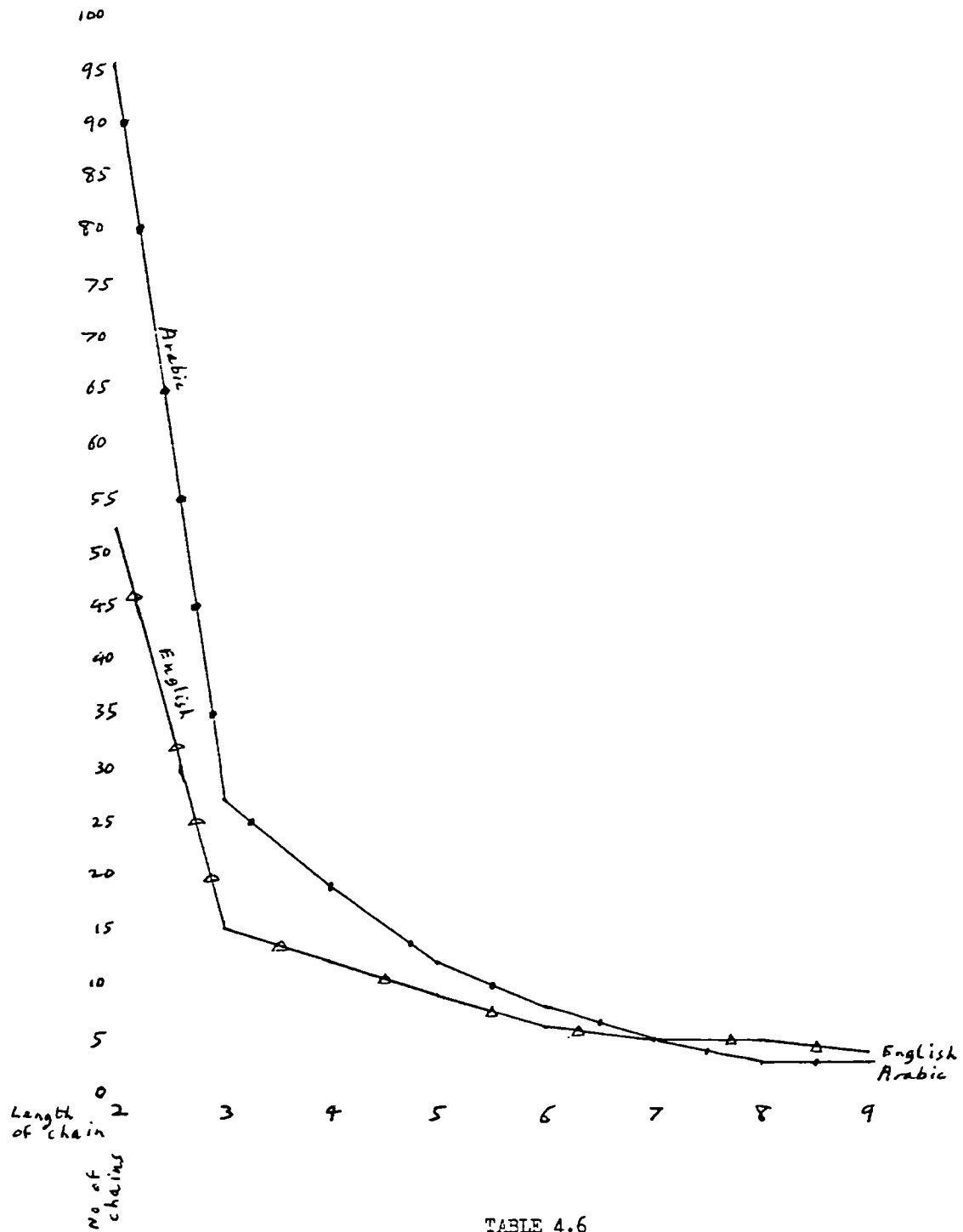
TABLE 4.6

4.2.1. The Theme-Rheme Analysis.

The theme-rheme analysis was carried out as described in Chapter 3 Section 6 above. The quantities of items occurring in each of the categories (theme proper, theme proper oriented theme, diatheme oriented theme and diatheme) are set out in Tables E.35-38 below. In the rest of Section 4.2.1., the columns are compared in turn.

4.2.1.1. Theme Proper Elements Compared.

When the Arabic Corpuses B and D are compared with the English Corpuses A and C, no significant difference is found in usage. However, there is a significant difference between Corpuses C and D (significant at 0.01). The results of the 't' test are set out in Table E.39. What has happened is that whereas the proportion of theme propers has remained fairly constant in both Arabic Corpuses (mean for B=36.7, mean for D=37.6) the number of theme proper elements in the English theses (corpus C) is far less than the number in the Corpus A (mean for A=46.6, mean for C=23.3). This would suggest that in English technical writing the thematic part of the sentence is expected to carry far more information than is the case in Arabic.

It is noteworthy also that a significant difference is found between the proportion of theme proper elements occurring in the two English Corpuses A and C (t=2.5637, significant at 0.02), whereas there was no significant difference between the proportion of items occurring in the two Arabic Corpuses B and D. This sug-

gests that in this respect at least English distinguishes techni-
cal writing from other genres in a way that Arabic does not.

4.2.1.2. Theme-Proper Oriented Elements.

No significant difference was found between the proportions
of theme proper oriented themes in any of the Corpuses.

4.2.1.3 Diatheme-Oriented themes.

No significant difference was found between the proportions
of diatheme oriented themes in Corpuses A and B. However, very
significant differences were found between Corpuses C and D (mean
for C=15.0, mean for D=4.8, significant at 0.01), and A and C
(mean for A=5.0, mean for C=15.0, significant at 0.01). This
reflects the fact that technical English at least inserts more
background information through initially placed adverbial clauses.
The observations made in 4.2.1.1. above are reinforced. Table
E.40 gives the results of a 't'-test carried out on the results.

Due to the small number involved, no attempt will be made to
analyze diatheme-oriented themes in Corpuses A and B in greater
detail, in terms of function or internal composition. However,
those contained in Corpuses C and D are analyzed as follows. An
initial division is made between those functioning as Subject or
Object and those functioning as Adverbials. Then a further divi-
sion is made in the Adverbials between those realized by clauses,
adjuncts or noun groups. The results are given in Table E.41.

It will be seen from the first table that the vast majority
of diatheme-oriented themes are adverbial in function. In terms
of their position in the sentence, the vast majority of the ones
in Corpus C come in initial position, with a few coming medially,
whereas the ones in Corpus D are spread more evenly through the
rhematic clause.

When divided according to internal composition, the majority
in both Corpuses were realized by nominal groups functioning as
completives to a preposition. The proportions of nominal groups
and clauses in the English corpus was somewhat less than that in
the Arabic corpus, the difference being caused by the larger num-
ber of adjuncts in the English corpus.

4.2.1.4. Diathematic Elements.

No significant difference was found between the proportions
of diathematic elements contained in the Arabic and the English
Corpuses. However, there is a significant difference between the
two English Corpuses (mean for A=43.0, mean for C=57.1, signifi-
cant at 0.02).

The proportion of diathematic elements is greater in both
Corpuses C and D than in Corpuses A and B. However, the increase
is far more marked between the two English Corpuses than between
the two Arabic Corpuses. On this evidence, English seems to be
far more amenable to increased thematic complexity than is Arabic.

4.2.2.   Thematic and Diathematic Elements Compared According to Function.

Tables E.42-45 show the theme proper elements divided according to function (subject, complement, adverbial or clause). Clausal function indicates cases where the theme includes both Subject and Predicator, where there is almost a second-instance sentence. As no significant differences were found, the tables are included solely for purposes of completeness.

Tables 4.46-49 show the diathematic elements analyzed according to function.

Significant differences were found between the proportions of diathematic elements functioning as subjects and complements. Arabic Corpus D had far more items functioning as complements than English Corpus C, whereas English Corpus C had more functioning as subjects than Corpus D. Differences between Corpuses A and B were reversed, without being statistically significant, and tend to obscure the overall picture. Tables 4.50-1 show the results of 't'-tests carried out on these results.

These results reflect the more flexible word order of Arabic. Whereas the subject in English usually comes first, in Arabic any element may come first and therefore tend towards diathematic function. Since it can come first without being made the subject, there is no need for it to be made the grammatical subject.

4.2.3. Thematic and Diathematic Elements analyzed according to Composition.

Tables E.52-55 show the theme proper elements analyzed according to composition. In all the Corpuses the majority of the theme propers consisted of pronouns, with those consisting of nominal groups being second most frequent. However, no significant differences were found between the Corpuses. This was largely due to the fact that there were not enough items to analyze them at this delicacy.

Tables E.56-59 show the diathematic elements analyzed according to composition. This revealed that the Arabic bic texts contained a significantly larger proportion of diathemes consisting of pronouns than did the English texts. Table E.60 shows the results of a 't'-test carried out on these results. This once more suggests that the thematic section of the Arabic sentence contains less information than the English sentence. A pronoun can only function diathematically by making known items more prominent.

4.2.4. Diathematic Linkage.

As described in Chapter 3, diathematic elements were finally analyzed according to the type of linkage made with preceding elements. In order to do the analysis in sufficient detail, it was found necessary to use a seven-figure code to describe the link. The following chart lists the choices to be made under each digit:

First Digit. Clausal function of diatheme
    1   Subject/Object diatheme
    2   Adverbial diatheme

Second Digit. Textual function of diatheme
   1 Refocussing thematic information
   2 Bringing information from the rhematic to the thematic
     spheres
   3 Introducing rhematic information

Third Digit. Part of diatheme making connection
   1 Head
   2 Modifier of head
   3 Sub-dependent of head
   4 Connector structurally ellipted
   5 Whole group
   6 No connection
   7 Predicator
   8 Logical attribuand
   9 Complement

Fourth Digit. What the diatheme is connected to.
   1 Theme, including theme proper and theme proper oriented
     theme.
   2 Diatheme, including diatheme and diatheme oriented
     theme.
   3 Transition.
   4 Rheme.
   5 Rheme proper.
   6 Clause.
   7 Exophoric connection.
   0 Not applicable.

Fifth Digit. What part of the element is it connected to?
   1 Head.
   2 Modifier of head.
   3 Sub-dependent of head.
   4 Connector structurally ellipted.
   5 Whole group.
   6 Clause
   7 Predicator.
   8 Logical attribuand.
   9 Complement.
   0 Not applicable.

Sixth Digit. Type of Reference Relation.
   1 Same reference.
   2 Particularization.
   3 Generalization.
   4 Antonym.
   0 Not applicable.

Seventh Digit. Distance over which items are connected.
   1-9 Number of clauses, where 9 ==9.
   0 Not applicable.

This is quite an elaborate coding system, which may be of use in future research with the assistance of a computer. However, for the purposes of this research, I have focussed on two aspects of diathematic connection. The first is the maintenance of connection through head words, making use of the third and fifth digits. The second is the textual function of the element to which the diatheme is connected, making use of the fifth digit.

Tables E.61-64 describe the degree of *connection maintained* through head words. The key to these tables is given below:

1. Cases where head is connected to head (5/1=5/1)
2. Cases where either head functions as a connector.
3. Cases where neither head functions as a connector.

Table E.65 shows the results of a 't'-test carried out on these results. It is interesting to observe that the pursuit of continuity from head to head is greater in Arabic Corpus B than in English Corpus A but less in Arabic Corpus D than English Corpus C. In fact, in proportional terms they almost swop. The greater connectivity between heads in Corpus C than Corpus D is probably a reflex of the greater complexity of the thematic structure of English technical writing. To compensate for this the diathematic head word tends to remain constant.

Tables E.67-69 show the FSP function of the predecessor of each diatheme. The key to these tables is given below:

1. Theme
2. Diatheme
3. Transition
4. Rheme
5. Rheme Proper
6. Whole clause
7. Exophoric connection

0. Not applicable.

Table 4.62 shows the results of a 't'-test carried out on the rhematic predecessors of diathemes. This shows that in Corpus B there were a significantly higher proportion of diathemes whose predecessors were rhemes than in Corpus A (Average for A = 31.5, Average for B = 14.7, significant at 0.05). There was also a higher proportion of diathemes functioning in this way in Corpus D than in Corpus C, although the difference is only significant at 0.4. This last result may be due to factors outside the scope of this study, as suggested by the results of the F test (F = 5.2794, significance = 0.05). However, when the two results are combined, the difference remains significant at the 0.05 level.

This result is consistent with the presence of numerous short-lived identity chains in the Arabic texts discovered in Section 4.1.2.4 above and shows clearly that there is greater thematic turbulence in Arabic than in English writing, at least in the text types of which these Corpuses are representative. If thematic turbulence is a characteristic of argumentative writing – as some maintain – then it could be argued that this is evidence for Hypothesis Bv. It also gives support to the idea of tangentiality in Arabic writing (Hypothesis Bviii).

4.2.5. Textual Function of Diatheme.

Using the first two digits of the above code, it was possible to analyze the textual functions of both subject/complement and adverbial diathemes. Tables E.71-74 display the results of this analysis, the key to which is as follows:

1st Digit: 1. Subject/Complement Diatheme
              2. Adverbial Diatheme

2nd Digit: 1. Introduces information from the rhematic sphere
                 into the thematic sphere
              2. Maintains thematic elements in the foreground
              3. Brings new information directly into the
                 thematic sphere of the clause

Tables 75-76 show the results of 't'-tests carried out on the
first and third columns. These show that in Corpus D a signifi-
cantly higher proportion of subject/complement diathemes introduce
information into the thematic sphere from the rhematic sphere than
is the case in Corpus C; while in Corpus C a significantly higher
proportion of diathemes introduce new information directly into
the thematic sphere than is the case in Corpus D. Similar differ-
ences are apparent between Corpuses A and B but they are not sta-
tistically significant. These results give further support to the
hypotheses mentioned in the above section.

CHAPTER FIVE

CONCLUSION

5.   Lay-out of Chapter.

We have covered a lot of ground in the previous chapter and have pursued a number of avenues in order to discover differences between the textual patterns of English and Arabic. In this chapter, it will be our task to draw these strands together.

In Section 5.1-3, we shall look at the implications for further research in the fields of 'pause and intonation','clause relations studies', and FSP. In Section 5.4.1. we shall see to what extent this research has substantiated the hypotheses we put forward in Chapter 1 and elaborated and formalized in Chapter 3; and then in Section 5.4.1. we shall set out a systems network showing how the findings of this research fit together and can be used to show in quantifiable fashion some of the most fascinating areas of difference between Arabic and English.

5.1.   Implications for pause and intonation studies.

Pause has been found a very useful aid in dividing the texts up into units. It gives formal manifestation to certain phenomena dealt with by FSP. The following aspects deserve investigation:

i.   the relationship between pause, intonation and the
        characterization of the different types of rheme
        described in Section 5.3.1. below.

ii.   the relationship between pause, intonation and the
        occurrence of a diatheme or a diatheme-oriented theme.

iii.   the correlation between length of pause and intonation
        patterns. Are they or are they not independent vari-
        ables?

5.2. Implications for Cohesive Analysis.

A great advance in the study of cohesion will be made when
the cohesive role of lexis is more fully understood. At present,
techniques of analysis of its role are too uncontrolled. This
does not impede the work undertaken in this thesis, because it can
safely be assumed that the rate of occurrence of lexis having no
real cohesive role is similar in both English and Arabic, and thus
is eliminated from any contrastive study. Moreover, by counting
lexical strings separately and excluding such strings from the
category of 'repetition of single lexical items', the effect of
this factor is reduced even more.

However, this does not rule out the need for greater control.
There are two possible avenues of advance. One is that followed
by Ruqaya Hasan. Her work on identity chains and chain interac-
tion is very valuable. Nevertheless, work still needs to be done
developing a formalism to show when identity chains interact with
one another in constant fashion in narrative and descriptive

texts, and how they build on one another in meaningful fashion in argumentative texts.

5.3. Implications for FSP.

5.3.1. Rheme.

The main area of interest raised by this study is to do with the FSP concept of rheme. Very little research has gone into this area as yet but there are obviously different types of rheme and we shall examine them now.

The first type of rheme is what one might call the 'dummy rheme', given the number 30 in the appendices. There is only one type of item that fits into this category and that is Winter's Vocabulary 3 items when they have cataphoric reference. One example of this is:

> (5.1)   wa   qad i9tamadtu fi ha:Dihi ddira:sa 9ala 9iddat
>
>   masa:dir   'asi:la   'amaddatni: bika'Ti:r   mina
>
>   lma9lu:ma:ti ljadi:da, wa hiya <u>kama: yali</u>:
>
> I have depended in this study on a number of original sources
> which have provided me with much new information, and these
> sources are <u>as follows</u>:

The phrase 'as follows' has as yet no referential content, signalling rather that the clause or clauses following are elaborations of one element within its matrix clause. In the light of future research it may be deemed advisable to include 'wh' words under this category as well. However, I have not done that in this thesis, prefering to treat them in various ways according to their exact function within the RC. They are a problematic area for FSP research.

The second type of rheme is what one might call the incomplete or downgraded rheme (given the number 31 in the appendices). This is a rheme with some referential content but still leaving the reader with the expectancy of more. It may well be found to be realized intonationally by a lack of sentence final fall. Examples of a rheme of this type are as follows:

(5.2) Whenever some Weimar republic gets rid of some old monarchy, the liberated crowd turns _its_ _republic_ over to some Hitler. (A1.2)

(5.3) Then _what_ _consolation_ remains for the brute fact that sustained progress is impossible?. (A1.3)

(5.4) The field for official propaganda activity remained _narrow_ so long as effective public opinion was restricted by low standards of literacy and education. (C4.9)

Each of these rhemes is incomplete for different reasons. Ex.5.2 is incomplete because the case frame of the verb is still incomplete. Example 5.3 is incomplete because the referential content of 'consolation' has not yet been given, and Example 5.4 is incomplete because a further specification follows.

The third type of rheme is what is usually called 'rheme proper'. This is given the number 32 in the appendices, unless there are more than two rhematic elements, in which case the sec-

ond digit augments. this reflects the fact that rhematic elements acquire more weight as they are moved towards the end of the sentence. This is the unmarked type of rheme and many examples can be found in the appendices.

5.3.2. Transition.

The second area of interest raised by this study is the status of the the FSP transition. In my work I have treated such phrases as part of the transition on the basis that they qualify the truth value of the predication. This is similar to Halliday's attribution of such expressions as "I believe that ..." to the theme on the syntactic basis that the tag question required for the sentence "I believe he's coming" is "isn't he?", not "aren't I?" (Halliday 1985 pp.56-9). In his analysis, an interpersonal element within the theme has been changed by a process of grammatical metaphor into a main clause.

The approach I have taken is not wholly satisfactory. Problems occur in the treatment of such items as "M.A. Fitzsimons has asserted that ..." (C7.11). It is transitional to the extent that it qualifies the truth value of the the statement that follows. However, it is also diathematic to the extent that it is along this axis of similarity between different opinions that the text is at present developing. The attribution quoted parallels the attribution in the previous RC "Elaine Windrich has been concerned to show that ...". There is no theoretical reason why they should not perform a dual function. However, in this research I

have chosen to treat them as diathematic when they occur like
this, and to ignore their transitional function.

Perhaps the ambiguity is due to the fact that the role of the
transition is not adequately defined in FSP. Although the tran-
sition is supposed to consist of the TME's, it is not the temporal
function or the modal function that makes it transitional, but
rather its function as signalling a predication or proposal. More
research most definitely needs to be done in this area.

5.3.3. An Application of FSP to Arabic.

One interesting area of Arabic grammar to which the concept
of 'diatheme' can be applied is to specify the conditions for the
use of the nominal rather than the verbal sentence. I put forward
the following conditions which have to be satisfied before a nomi-
nal sentence can be used:

i.   The subject must not be of theme proper status.

ii.   The subject must be derivable from the preceding text,
      at least via a hypertheme

These criteria need to be tested and if necessary modified,
but I do believe it gives a more satisfactory framework than any I
have so far discovered.

5.4. Conclusions from Research.

5.4.1. The Orality of Arabic.

The following conclusions can be drawn from the analysis of
the data presented in Chapter 4:

i.   Arabic tends to avoid ellipsis. (cf. Section 4.1.1.3.)

ii.   Substitution is a marginal phenomenon in both English and Arabic texts of the sort analyzed. However, English does tend to use it more than Arabic. (cf. Section 4.1.1.2.)

iii.   Arabic displays more cases of modality than English, in all types of texts. (cf. Section 4.1.1.5.)

iv.   Arabic seems to use a higher proportion of pronouns than English. This is reinforced by conclusion viii. below. (cf. Section 4.1.2.1.)

v.   English displays a higher proportion of synonyms than Arabic. (cf. Section 4.1.2.3.2.)

vi.   Arabic displays a higher proportion of lexical strings than English. (cf. Section 4.1.2.3.3.)

vii.   Arabic displays more repetition of clause structure than English. (cf. Section 4.1.2.3.4.)

viii.   The proportion of theme propers used in Arabic technical writing is greater than that used in English. (cf. Section 4.2.1.1.)

ix.   English technical writing contains more diatheme oriented themes than Arabic. (cf. Section 4.2.1.3.)

x.   English technical writing contains significantly more diathematic elements than Arabic technical writing. (cf. Section 4.2.1.4.)

xi.   Arabic technical writing contains more pronouns with diathematic status than does English. (cf. Section 4.2.3.)

xii.   Arabic has a greater proportion of diathemes function-
          ing as complements than English, whereas English has a
          greater proportion of diathematic elements than Arabic
          functioning as subjects. (cf. Section 4.2.2.) xiii.
          Arabic diathemes are more often used to introduce new
          information from the rhematic sphere into the thematic
          sphere than is the case in English. (Section 4.2.5.)

xiv.   English technical writing has more cases of head-word
          to head-word connection than Arabic. (cf. Section
          4.2.4.)

xv.   English technical writing has more cases of diathemes
          introducing totally new information. (Section 4.2.5.)

xvi.   Arabic uses more multifunctional connectors than Eng-
          lish does. (cf. Section 4.1.2.2.)

How do these relate to the hypotheses set out in the intro-
duction?

Ai. Arabic uses repetition structure more than English.

This hypothesis is supported by the high degree of clause
structure repetition in Arabic in comparison with English.

**Aii. The unmarked clause relation in Arabic is the matching rela-
tion whereas the unmarked clause relation in English is the log-
ical sequence relation.**

This remains unproved. A more promising avenue for future
research may take as a hypothesis that Arabic has less 'emic'
clause relations in the logical sequence field than does English.

Bi. Arabic is 'additive rather than subordinative'.

This is supported, although not perhaps proved, by the fact
that Arabic has more 'wa's than English has 'and's. It is also
supported by the fact that English has more adverbial clausal ele-
ments coming in initial position than does Arabic.

Bii. Arabic is 'aggregative rather than analytic'.

This is supported by the fact that Arabic displays more lexi-
cal strings than does English.

Biii.   Arabic is 'redundant and copious'.

This is backed up by the avoidance in Arabic of ellipsis, and
the frequent use of lexical strings.

Biv. Arabic is 'close to the human life-world'.

This is not directly supported by any conclusions drawn in
this research.

Bv. Arabic is 'agonistically tuned'.

This is supported by the presence of a significantly higher
proportion of diathemes keeping thematic information continually
highlighted for the reader. Although both Corpus B and D do show
a higher proportion of diathemes functioning in this way than do
Corpuses A and C, the difference is not statistically significant.
We therefore have to conclude that this hypothesis is not proven.

Bvi. Arabic is 'empathetic and participatory rather than objec-tively distanced'.

This is supported by the greater intrusion of addresser and addressee into the text evidenced by the Arabic corpuses.

Bvii. Arabic is 'homeostatic'.

There is no evidence of this in the data. This could only be verified by a study of semantic change in Arabic.

Bviii. Speech is 'situational rather than abstract'.

This is supported by the high degree of thematic turbulence displayed by the Arabic texts when they are compared with the English texts. It would be intriguing to know, though, why Arabic texts are not then as incoherent as the text from Goldsmith 1982 quoted in the introduction. One possible explanation is that in Arabic texts two or more ideas are developed in parallel, braided together and moving in swift succession between the thematic and rhematic spheres.

Thus the data is generally consistent with, though not total proof of, the argument than Arabic is written as if to be spoken rather than written as if to be read.

5.4.2.   Patterns of Cohesion and Textual Development in English and Arabic.

The contrast between the patterns displayed by English and Arabic is best displayed in terms of a systems network of the textual component applicable to both English and Arabic. Table 5.1

shows the network entered at the Rhematic Clause level and Table
5.2 shows the network entered at the group level. The terms
within the systems are all explicit with the exception of the
terms 'XTheme', which is intended to be a superordinate of the
terms 'diatheme' and 'theme proper', and 'XRheme', which is
intended to be a superordinate of the terms 'Rheme Proper', 'Down-
graded Rheme', and 'Dummy Rheme'. Above each term in some of the
systems there are two expressions - E= .., A= ... These show by
means of differential weightings given out of ten the probability
of a certain choice being made in a particular language. The let-
ter 'E' stands for English and 'A' stands for Arabic. Not all the
systems are thus weighted for lack of the necessary information.
However, a substantial number are and they show the basic differ-
ences between the textures of the two languages. All the weight-
ings given are based on the corpuses and tables found in this the-
sis. How they are were arrived at is described below. Each
system is described by a letter which can be located by the reader
in the systems network.

The weightings for System 'a' were calculated by taking the
number of diathemes introducing new information directly into the
thematic sphere as a percentage of the number of RC's in the cor-
puses divided by ten.

The weightings for System 'b' were calculated by taking the
number of sentence connectors and Vocabulary 3 items with cata-
phoric reference as a percentage of the RC's in the corpuses
divided by ten.

```
                                    ┌Participant────────────┌Subject
                              ┌─────┤                       │
                     ┌ + XTheme{    └Circumstance           └Complement
                     │        {─────────────┌Objective
                     │        {             ┤
                     └ - XTheme             └Subjective
                                                              ┌Negation
                                                              ┤Rhetorical Question
                    ┌ + Rheme Proper ┤ ┌ + Commitment─────────┤Adverb
                    │                  ┤                      └Culturally Conditioned
                    │                  └ - Commitment
                    └ - Rheme Proper ──────────┌Dummy Rheme────────┌Explicit
                                               └Incomplete         └Implicit
```

a.   (E=4·7, A=3·3)
┌ + New Background Information
│
│   (E=5·3, A=6·7)
└ - New Background Information

                                            ┌Voc. 3
                                            └Superordinate

                                    f.   (E=2·9, A=6·1)
                                    ┌General Purpose Connector
b.   (E=7·2, A=6·5)   │
┌Clause Relation Explicit   │   (E=7·1, A=3·9)
│   └Specific Connector
│   (E=2·8, A=3·5)
└Clause Relation Implicit

                                    ┌Discourse Adjunct   ┌Coordinator
                                    └Conjunction────────────────────┤
c.   (E=0·5, A=2·5)   └Subordinator
┌Addresser Explicit
│   g.   (E=0·9, A=1·1)
│   (E=9·5, A=7·5)   ┌ + Voc. 3 with Anaphoric Reference
└Addresser Implicit   │
                                    │   (E=9·1, A=8·9)
                                    └ - Voc. 3 with Anaphoric Reference
d.   (E=0·5, A=2·5)
┌Addressee Explicit
│
│   (E=9·5, A=7·5)
└Addressee Implicit

e.   (E=0·7, A=1·6)
┌ + Clause Framework Repetition
│
│   (E=9·3, A=8·4)
└ - Clause Framework Repetition

                        TABLE 5.1

                Systems at the Rhematic Clause Level

187

TABLE 5.2

Systems at Group Level

XRheme
- Rheme Proper
  - Dummy
  - Incomplete
  - Downgraded
- Non-Rheme Proper

XTheme
- Continuative
  - h.(E=1·3, A=0·4) Ellipted
    - i.(E=1·2, A=1·3) Pronominal
    - (E=8·8, A=8·7) Full
      - j.(E=8·0, A=9·0) Same Item
      - (E=1·3, A=0·4) Synonym
      - (E=0·6, A=0·4) Superordinate
      - (E=0·2, A=0·2) General Word
  - (E=8·7, A=9·6) Non-Ellipted
    - Developmental
      - Introductory
      - Reassertive
      - Contrastive
      - Summative
    - Non-Developmental
- Non-Continuative
  - Related to Previous Theme
  - Related to Previous Rheme
  - Related to Previous T/R
  - Non-related

The weightings for Systems 'c' and 'd' were calculated by taking the number of modal items as percentage of the number of RC's in the corpuses and dividing the result by ten. No distinction was made between addresser and addressee explicit in Tables E1-4 although they are potentially independent variables in the network. The weightings for System 'e' were calculated by taking the number of cases of clause structure repetition as a percentage of the number of RC's in the corpuses divided by ten.

The weightings for System 'f' were calculated by taking the number of tokens of connectors with two functions featuring in Tables 4.3 and 4.4 as a percentage of the total number of tokens divided by ten.

The weightings for System 'g' were calculated by taking the number of Vocabulary 3 items with anaphoric reference as a percentage of the number of RC's in the corpuses divided by ten.

The weightings for System 'h' were calculated by taking the number of cases of ellipsis as a percentage of the number of RC's in the corpuses divided by ten.

The weightings for System 'i' were calculated by taking the number of pronominal items as a percentage of the number of pronominal and lexical items featuring in System f in the corpuses divided by ten.

The weightings for System 'j' were calculated by taking the four types of lexical item in turn as a percentage of the sum of those featuring in the system divided by ten.

Tables F1 and F2 (See Appendix F in Volume 2) show the realization rules for these networks. In some cases the realization rules are somewhat speculative. This is indicated by placing these rules in brackets. Where one term in a system is mentioned and the other not, the one(s) that are not are best regarded either as negative choices which do not add to or modify the structure or as gates whose only function is to lead into more delicate systems. Where a whole system is not found this is because the exact way in which it is realized requires further study. The following examples show how the network and the realization rules could work:

> (5.5)   This reformation was essentially the achievement of
>
> King Edgar. (C1.2)

This sentence has chosen the following features from the clause level network:

> + XTheme, Participant, Subject, + Rheme proper, Objective, + commitment, Culturally conditioned, - new background information, Clause relation implicit, Addresser implicit, Addressee implicit, - clause framework repetition.

The nominal group "This reformation" has chosen the following features from the group level network:

XTheme, Non-continuative, Non-developmental, Full, Same item, Introductory, Related to previous rheme.

(5.6)   However, until approximately the First World War, foreign policy decisions were made in their own largely self-contained and essentially European diplomatic culture. (C2.2)

This sentence has chosen the following features from the clause level network:

+ XTheme, Circumstance, + XTheme, Participant, Subject, + rheme proper, Objective, - commitment, - new background information, Clause relation explicit, Specific connector, Discourse adjunct.

The prepositional phrase "until approximately the First World War" has chosen the following features from the group level network:

XTheme, Non-continuative, Developmental, Related to ellipted element.

The nominal group "foreign policy decisions" has chosen the following features from the group level network:

XTheme, Non-continuative, Developmental, Related to previous theme.

(5.7)   fahum ṭabbaqu: mafa:hi:mi lqawmiya wa ṣṣira:9i 19unṣuri: fi: tafsi:ri l'aHda:Ti tta'ri:xiya. (D1.7)

And they applied the ideas of nationalism and racial struggle to the explanation of historical events.

This sentence has chosen the following features from the clause level network:

+ XTheme, Participant, Subject, + theme, Circumstance, + rheme proper, Objective, - commitment, - new background information, Clause relation explicit, General purpose connector, Conjunction, Coordinator, - Voc. 3 with anaphoric reference, Addresser implicit, Addressee implicit, - clause framework repetition.

The nominal group "hum" has chosen the following features from the group level networK:

XTheme, Non-continuative, Non-developmental, Pronominal, Reassertive, Related to previous theme.

The prepositional phrase "fi: tafsi:ri l'aHda:Ti tta'ri:xiya" has chosen the following features from the group level network:

XTheme, Continuative, Non-ellipted, Full, Same item.

(5.8)   wa hiya na:Hiya 'arju: 'an taku:n jadi:da fi: maja:li
         l'abHa:Ti tta'rixiya. (D3.17) .
         This is a point that I hope is new in the field of historical research.

This sentence has chosen the following features from the clause level network:

+ XTheme, Participant, Subject, + rheme proper, Objective, -
commitment, - new background information, Clause relation
explicit, General purpose connector, Conjunction, Coordinator,
Addresser explicit, Addressee implicit, - clause framework
repetition.

The nominal group "hiya" has chosen the following features
from the group level network:

XTheme, Non-continuative, Non-developmental, Introductory,
Pronominal, Related to Previous Rheme.

It is important to realize that while Halliday's system net-
work for theme (Table 2.3) is totally syntactically motivated
without any attempt to be functional, the network I have devised
here is intended to be as truly functional as present knowledge
allows.

The question might be asked: **"What is the status of such a
network as I have outlined - or indeed any network?"**. While
accepting that *a speaker is not aware* of the relative frequency of
the use of a form, the speaker is usually aware of the effect the
use of a particular form will have on his audience, and therefore
he is capable of attributing a pragmatic as well as a semantic
value to the choices he makes. It is true that in many cases one
term in a system will be the unmarked 'vernacular' one which the
speaker uses naturally when he is not monitoring his speech. How-
ever, this in no way invalidates the argument that there is a gen-
uine choice to be made, for the speaker in his entirety is at

least partly a sum of the choices that he has made, and therefore carries within himself a semiotic meaning of his own. Moreover, even by refusing to choose, living, moving and talking unthinkingly, he has made a choice. This choice may be the negation of life but it is still a choice. So, at least in the Firthian sense, there is meaning to be found at every stage of the system network.

5.5. Postscript.

Thus we conclude this dissertation. It has turned out to be more programmatic than first envisaged and I trust that some of the suggestions for future research spelt out in this last chapter will be taken up in coming years, either by myself or someone else.

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