CHAPTER V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

5.1 SUMMARY

This study analyses the reference items in six agricultural articles of the factual genre of two types - reports [3 texts] with a descriptive function and explanations [3 texts] with an explanatory one. Both are generalised across experiences and do not involve activity sequences. The analysis has a heuristic or descriptive objective of identifying patterns and relationships, if any, of the reference items in each genre type, and to determine their contribution to the cohesiveness of text. For this, a qualitative analysis was conducted.

All articles were taken from 'The Planter', a monthly journal of The Incorporated Society of Planters [1995-96], and analysed in 3 ways:

i. Halliday’s notation system to identify the reference items,

ii. Halliday-Hasan’s Coding Scheme to distinguish the cohesive items, and

iii. Martin’s reference chains to determine participant identification.

'The Planter' was chosen because it provides up-to-date information on the agricultural field with a wide range of genre types [reports, explanations, narratives, biographies, etc.]. 14 magazines [1995-96] were scanned and three articles of the report and explanation type were chosen. Except for R.K. Jones, all writers are non-natives whose native language is not English. But this was not taken as a criterion in this study, thus the contribution of this factor to the cohesion of texts

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was ignored despite some confusion in Explanation Text 1. Consequently, all six
texts were analysed in the three ways mentioned above and their findings recorded
in Chapter IV.

5.2 CONCLUSIONS

1. From the findings of the analysis of cohesive reference items using Halliday and
Hasan's notation and coding schemes, we find that the ratio of cohesive
reference items to the total reference items (CR/R) is 59.3% in the reports and
64.1% in explanations. Thus, 40.7% of the reference items in the reports are
non-cohesive while 35.9% of them are non-cohesive in the explanations. Does
this indicate a high degree of non-cohesion of text due to the non-cohesive
nature of several of these items? Several factors have to be taken into
consideration when we determine the cohesion of text, one of which is forward
and backward reference within a sentence. Halliday and Hasan do not consider
this, hence the number of reference items that are non-cohesive would be
considerably higher than what it would be if this fact is taken into account.
Martin's reference chains, on the other hand, accepts forward reference within
a sentence (esphora) and backward reference within a sentence as cohesive,
given that there is enough information to recover from the identification
system. In short, it is necessary to take the reference chains into account to do
backward and forward tracking of participants, as a supplement to Halliday-
Hasan's method. It is possible that a long specific reference chain would signify
a high level of cohesion. But this does not mean that texts with generic chains

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are less cohesive - as long as generic groups are realised by participants, they are considered as contributing to the overall cohesion of text.

2. If generic chains are taken as a criterion contributing to overall cohesion, then we would have Report Text 3 as being the least cohesive among the reports due to the presence of many non-retrievable items under ‘labour’. Under the explanations, Text 1 and 3 would be rendered less cohesive because of the presence of generic group items which are not recovered (‘harvesting’, ‘barn owls’). These would then correspond to the findings in 4.3.3. Yet, under the findings in 4.3.3, Report Text 3 is considered the most cohesive of the reports, and this text contains the most number of generic chains and several non-recoverable items under ‘bioherbicides’ and ‘fungal pathogens’. Therefore, the length of generic or specific chains should not be the basis to consider cohesiveness.

3. On the whole, scientific texts [agricultural texts here], contain phoric items that are not simple nouns or pronouns but are whole groups or clauses, sometimes even whole texts. They are retained as whole groups and not broken into individual words to preserve their meaning and effectiveness in playing their role in participation identification, as in: ‘identification and multiplication of the pathogenic fungi’ (Fig. 1C - 20). The meaning is not as effective if each word is taken separately because it is the whole item which is presumed by ‘These’, which in turn presumes ‘a number of steps’. Hence, phoric items of very long structures (groups, clauses or text) seem to be the norm in agricultural texts.
4. Another common feature is the presence of generic groups. Phoric and non-phoric items are underlined in 4.4.2 and they feature in the reference chains in 4.4.3. But not all the non-phoric items are presented in the reference structure. Non-phoric items which are not recoverable or presumed by other items in the text do not enter into semantic dependencies with other articles and are therefore excluded from the reference structure. Only non-phoric participants which are presumed by other participants and are recoverable are retained in the reference structure. They may be realised several times by demonstratives or pronominals or even comparatives. These are the generic participants which may be introduced either definitely or indefinitely, as in:

4.1 'surveys of......pathogenic fungi' (Fig.1C-19),

4.2 'the estate sector' (Fig.2B-8),

4.3 'a cold reality' (Fig.4B-5)

4.4 'the writer' (Fig.5B-5),

4.5 'the use of rodenticides' (Fig.6A-31).

In generic reference, definiteness does not matter. As long as the experiential content of a generic nominal group is understood, it is clear which participant is being identified. They do not depend on their context in the way specific groups do - unless their realisation involves demonstratives or pronouns [they, these, etc.], their context is actually simply that of knowledge of the language being used. However, generic groups may neutralise number, e.g., 'surveys of pathogenic fungi' may be replaced by 'the survey of pathogenic fungi' without
changing the meaning. Or ‘transfer of fungi’ may be replaced by ‘transfer of the fungus’.

These neutralisations affect the nature of cohesive patterns in texts oriented to generic participants. While pronouns and demonstratives are commonly used to presume generic participants, ‘the’ is not phoric in generic contexts (unless from knowledge of the language and context, we know that it is definitely referring to a particular participant). Thus, this has the effect of breaking up the participant line into a number of short generic reference chains. These groups are aligned directly under one another with dotted arrows to show that the same participant is being realised, though not continuously presumed. These generic chains are abundant in Report Texts 1 and 3, and in Explanation Texts 1 and 3. While Report Text 2 has a few such chains (seed varieties), Explanation Text 2 does not have a single one. This does not necessarily mean that these two texts are the most cohesive of all the texts reviewed. Generic reference chains are a prominent feature of factual texts, whether report or explanation. Hence this cannot be used as a basis to judge the cohesiveness of text. Reference chains, in fact, are used to track the identity of participants and to trace the sequential unfolding of text with succeeding items listed below preceding ones. Thus, a coding scheme alone for reference items (as was used by Halliday-Hasan) is not sufficient to determine the contribution of reference items to cohesion but also a semantic dependency structure to recover information from the identification system through phoricity.
5. In generic chains, most non-phoric, plural items are redeemed through reminding phoricity (pronouns, 'the' and other demonstratives). But some items are also retrieved through relevance phoricity, though this is less commonly found in generic groups than in specific groups, as in: 'a similar fate' (Fig.3C-40) and 'any further baiting' (Fig.6A-17) where comparatives are used.

6. Partial reference is exhibited by several participants in these texts. Where specific reference is co-selected with presenting, the question of how many members of a class are involved is relevant. We see this in 'a wide variety of crops' (Fig.1B-12); 'any nation' (40); 'certain crops' (Fig.2B-44); 'many plantations' (Fig.3B-46); etc., as opposed to total reference portrayed by '15 H&C estates ... each of the selected estates' (Fig.5C-28,29).

7. Initial mentions are often mass and plural nouns and this is especially significant in factual texts. Thus, all the texts indicate this quality, e.g., 'economic benefits' (Fig.1A-41); 'developing nations' (Fig.2A-7); 'plantation companies' (Fig.3B-54); 'locals' (Fig.4B-6); 'estates' (Fig.5C-23); and 'barn owls' (Fig.6C-title). However, mass and plural nouns lacking an indefinite article (as in the examples above) provided referents for other nominal groups more than when an indefinite article is present, e.g., 'several fungal pathogens' (Fig.1C-17).

8. Often, and especially in scientific texts, knowledge of the context of culture and context of situation is important to retrieve participants from the identification system. Halliday and Hasan considered redundancy phoricity as
primarily textual, being mainly anaphoric, sometimes cataphoric, and seldom exophoric. But Martin distinguishes homophora from exophora/endophora, and states that generic reference is NOT a kind of homophora, as stated by Halliday and Hasan. Generic reference depends on knowledge of the language and culture as a whole and not knowledge of the relevant cultural context, thus 'the tropics'(Fig.1B) and 'the plantation industry'(Fig.3B) are homophoric, while 'us' and 'we' (Fig.6A) are taken as generic. Generic reference does not presume the identity of the participants the way homophoric reference does (see reference chains).

9. While Halliday-Hasan does not accept reference WITHIN a sentence as cohesive, Martin considers reference presuming information in the same sentence as cohesive, i.e., an item can presume information from the preceding co-text [anaphora] or from the following co-text [cataphora or esphora]. In the reference chains here, it is observed that if the presumed information follows an item, it usually appears immediately in the structure of the same nominal group or in the same or adjacent clause complex, otherwise participant identification would break down, e.g., 'The next step is the production of fungi'(Fig.1C), 'Malaysia's current ratios.....to those of one worker to about 400-500 acres'(Fig.2A); 'an article on Prang Besar, its origin and growth'(Fig.5A). All these show a kind of forward reference termed esphora, which is a common way of introducing participants into a text.

While Halliday and Hasan regard such forward reference as NOT cohesive, the reference chains indicate the necessity of such structures and how
participant identification is maintained for overall cohesiveness. As long as there is enough information to identify a participant, esphora contributes significantly to the overall cohesion of texts.

10. Forward reference between GROUPS or cataphora is also common in scientific texts. What is prominent here is that cataphoric reference almost always presumes text, rather than participants, as in the examples: 'such work' presuming 'the introduction of the rust fungi' (Fig. 1C); and 'This' and 'two parts' presuming the projection 'Gough’s Bible - Part I, Gough’s Bible - Part II' (Fig. 5A). But more often cataphoric reference is found during classification (see below).

11. Bridging is seen where implicational relations between parts and wholes, and among parts, are usual. Knowledge of the language and context is relied upon for this. Thus, the identity of 'the plantation industry' is established through 'the plantation companies'. It goes without saying that an industry [e.g., textiles, electronics, etc.] consists of 'companies' (Fig. 3B). There are numerous other cases of bridging in these texts but there is nothing to indicate that there is more indirect reference in reports than in explanations.

12. Addition items, or those participants which are phoric but non-recoverable either directly or through implication, abound in these texts too. However, a considerably higher proportion of these items are noticed in the factual explanations [especially Texts 2 & 3] than in the factual reports. This may be due to the nature of the subject-matter of these two genre types - the first focuses on a vast area covering the topic under discussion, whilst the second
concentrates on specific areas of the topic being discussed. Hence, the reports have more plural and mass nouns which are non-phoric and non-recoverable (e.g., bioherbicides, crops, planters, labour, etc.) when compared to the explanations.

13. A distinct feature of the factual genre is its tendency to taxonomise or classify. In ALL the texts examined in this study, report as well as explanation, we see a taxonomy of technical terms through anaphora, cataphora or esphora. 3 types of classification are noticed:

13.1. through the provision of examples, as in: Fig.1C where the 'unwanted plants' are classified; Fig.3C where the 'standard agronomic practices' are classified; Fig.4C where the 'current management practices' are given(11-12); the taxonomy of the 2 parts of the 'precis' on Prang Besar in Fig. 5A; and the various estates coming under '7 estates' in Fig.6B.

13.2. through knowledge of the context and experience, as in: 'the tropics' and 'any nation' in Fig.1B; 'developing nations' in Fig.2A; the different types of 'labour' in Fig.3A; the 2 types of machines involved in the 'mechanical process' in Fig.4E; 'predators' in Fig.6C.

13.3. through the elaboration of procedures where a distillation of facts or technical terms is observed, as in: Fig.1C where the R&D work involves 'surveys ......identification......multiplication.....transfer to parent weed......infection / re-infection'; Fig.2D where the 'gene pool' is classified through 'it' into 'genetic manipulation' and 'gene transfer' whereby 'desirable characteristics' are transferred; Fig.3C where 'harvesting at a much earlier
date’ is due to ‘no ablation’ and therefore is a bad agronomic practice; Fig.4C where the ‘new ripeness standard’ should be ‘bunches with colour change’ which will give ‘the best comparative yield unit of land.....15 days’; Fig.5C where ‘the purview’ is concerned with the ‘production ...testing.....proving.....recommending’ the ‘high-yielding material’; Fig.6B where ‘the introduction of barn owls’ would lead to the discontinuation of ‘rodenticides’ and the only ‘reason’ that some ‘boxes’ are not occupied is because of other ‘predators’.

In all these and others given in 4.5.1 and 4.5.2, a distinct pattern is noticed - the factual reports tend to elaborate and distil technical terms through experience and sometimes through definition. We do not see many instances of definition as these texts are not reports of processes. Nevertheless, it is observed in Fig.2D where ‘gene transfer’ and ‘gene manipulation’ are actually the transfer of ‘desirable characteristics between species’. The second instance is the definition of the term ‘phytotoxicity’ in Fig.3C.

In the factual explanations, however, the pattern is different in the sense that there is a distillation of facts with an explanatory or reasoning quality, e.g., ‘if we can increase the ratio to 30% ...... we theoretically could increase the land-harvester ratio by 100%’, etc.

14 Extended reference or reference to text as act is not seen in these texts. Being scientific texts which are factual in nature, and not descriptive, we do not see any act being referred to.
15. **Redundancy** phoricity does not contribute to the reference structure as **reminding** and **relevance** phoricity. This is because it is not concerned with presuming the identity of participants but with realising some aspect of their **experiential** meaning. **Substitution** and **ellipsis** at group rank is more an aspect of **lexical** cohesion, therefore redundancy phoricity is not discussed here in this study.

16. On the whole, through participant identification and the backward as well as forward tracking of participants, the **sequential** unfolding of each text is revealed. The presence of **generic** chains do not interfere with the **unfolding** of text, rather it reveals an important fact about factual texts - that a particular participant is realised by **other participants** in different ways showing that a particular fact can be sub-divided into several sub-classes realising it. Hence, texts which are considered **non-cohesive** by Halliday-Hasan’s standards should be reviewed.

17. Consequently, the analysis provided the following answers to the research questions:

i. Based on the analysis following Halliday-Hasan’s method, we can conclude that factual **reports** favour more **demonstratives** [75.9%, of which 54.6% are cohesive] than the factual **explanations** [63.5%, of which 48.8% are cohesive] while the latter had a high number of **pronominals** [three times more than the reports]. The number of cohesive items would have been **higher** if esphora had been considered. Both genre-types have a **low** density
of *comparatives* but it is obvious that the reports have more than twice the number of them than the explanations.

ii. the density of reference items and types for each genre-type does not remain constant but *varies* from text to text.

iii. in both genre-types, the presence of reference chains are *equally* important to track participants in order to make whole messages, and for the sequential unfolding of text to ensure the threads of continuity and cohesion. Reference chains, in fact, help us to see what is missing in Halliday-Hasan’s method - *participant identification*.

5.3 **IMPLICATIONS AND RECOMMENDATIONS**

1. This study’s findings would have great implications on the English Language syllabus as well as *teaching programmes* for English Language teachers in our country and in countries where the first language is NOT English. A *text* is a *unified whole* of anything that is spoken or written, and not just a collection of unrelated sentences. Thus, to use spoken and written English properly, it is important that students and teachers understand the need to maintain not only *coherence* in their text but also *cohesive relations*. *Cohesion* is a *semantic* relation between two or more elements in the text, and the *interpretation* of a text would be based on how *cohesive* these elements are. As the use of the *Article* [*a, an, the*] and *demonstratives* [*this, that, here, there*, etc.] is one major *weakness* of our present students nowadays, it is hoped that
this study would provide an insight into the teaching of these items through the retrieval of participants from the identification system.

2. In the field of research in Applied Linguistics, this analysis would add to the generally small collection of studies on COHESION, especially on scientific texts, and provide researchers and students of systemic linguistics with a better idea of this area.

3. This study was not aimed at determining the cohesion of any particular text, rather to examine the contribution of reference items to the overall cohesiveness of the text and to trace the sequential unfolding of text through participant identification. There are so many other fields which have not been examined so far under the factual genre itself, thus it would be interesting to track participants in these fields, e.g., political speeches [expositions, debates, etc.], lawyers reports / articles / speeches, etc., engineering and architectural articles, etc. Research students can also delve into one of the other systems constituting the discourse semantic stratum, as proposed by Martin - NEGOTIATION, CONJUNCTION and IDEATION - and how these systems, including IDENTIFICATION, interact systematically with lexicogrammatical structures [the question of texture]. Since research into the factual genre is still low compared to narratives and descriptions, it is hoped that more research would be conducted on the various systems of this genre.