CHAPTER 1
INTRODUCTION

1.1 OVERVIEW

In this section the notions of complementation and complement clauses are introduced and the complex nature of complement clauses discussed (1.1.1). The various approaches one could take to the study of complement clauses are outlined in 1.1.2. The general motivation behind this dissertation is presented in 1.1.3.

1.1.1 The complement clause is a structure that is sufficiently complex syntactically and yet with a high degree of occurrence in most languages to be of interest for systematic research. Complement clauses are a meeting ground for the application and testing of several current syntactic hypotheses and a great deal more study than has been done is required in this area.

Traditionally, a complement was that part of a sentence which completed the meaning of the predicate of that sentence. Logically therefore, a complement is something that must be selected by (some part of the) predicate in order to fulfill the semantic needs of the sentence in which such a predicate participates. In modern-day syntax this idea is presented in terms of theta-selection: a complement is an argument, selected (subcategorized for) and assigned a thematic role by the verb,
loosely speaking, which requires a complement to be fully interpreted. In other words, complement clauses meet the subcategorization needs of the verb (or the "selector" to keep things general; the less proto-typical non-verb selectors are largely ignored in this study, as they raise special problems of their own, and we need to improve our understanding of the "straightforward" cases first).

A clause on the other hand is something which can contain arguments, non-arguments etc. A complement clause therefore should be a construction which is a full clause with its own subject and predicate — including complements — as well as functioning as a complement of some other predicate. The complexity of complement clauses, relative to other constructions, is thus at once apparent.

It is well worth remembering that complement clauses are often discussed as prime examples of embedded or subordinate clauses. What does this signify? The information structure of a sentence is not a well understood area. It is clear, however, that some sort of highly species-specific strategy is involved in the makeup of embedded clauses. In the well documented experiments with chimpanzees we can notice that for the most part, the linguistic repertoire ends with the acquisition of simplex sentences. Related to this is the universally "difficult" nature of the embedded clause — children acquire embeddings at a fairly late stage. Add to this the complexity typical of complement clauses that we noted in the above paragraph and we see that the
complement clause conveys very complex semantic and discourse-related information. The balance between the semantic content of the main clause -- a clause which is otherwise syntactically acceptable, it should be borne in mind -- and the completing function of the complement clause is delicate. There is so far no counter-evidence to the hypothesis that only human language faculty can achieve this balance.

1.1.2 One approach to the study of complement clauses would be a psycholinguistic approach. Beyond hinting at it as we have done in the preceding paragraph and noting that several well-researched studies already exist which adopt this approach, the scope of the present work does not permit a detailed delineation of the facts.

Another is the very essential taxonomic approach. Assuming that verbs select complement clauses, an approach of this sort would result in a classification of the information regarding which verbs select what kind of complement clauses in which languages of the world. It is a pity that one needs to reiterate the fact that building such a base is extremely useful as a step for probing a further issue at the explanatory level -- why do some verbs select some types of complement clauses?

A pragmatic approach would give a functional explanation of complement clauses. Mair (1990) warns that in order to understand why a particular complement is chosen in a particular instance, we must look at factors other than just the matrix verb
and its selectional properties/subcategorization frame. Recent studies on information packaging tell us that the information in a sentence is ordered – to give an example, 'given before new' is the unmarked order in English; however, discourse considerations often cause a variation in information order in a sentence. Or, to take a more familiar example, discourse considerations may interfere with the normal "psychologically motivated desire", in Mair's words, to have [+animate] subjects in clauses. To study syntactic phenomena in this fashion, from the pragmatic angle, is certainly highly interesting. Moreover, an academic exercise of this sort cements the idea that different linguistic interests and approaches need to interact for best results. Again, such an exercise is reluctantly abandoned here due to the limited scope of a single dissertation.

The syntactic approach chosen for this work seeks to describe the complement clauses, their structure, their idiosyncrasies, and attempts to understand their behaviour in terms of wider linguistic principles.

1.1.3 Having selected an approach, the next step is to determine what exactly a dissertation sets out to do. In this work, I maintain two attitudes: an informative attitude and an inquisitive attitude. The former ensures that the dissertation provides a useful account for translators in the form of an exhaustive compilation of complements selecting verbs in Hindi and Gujarati and a thorough description of the types of complement constructions; it is this attitude, infused with the applicability spirit
which prompts me to base the chapters on construction types, rather than have a syntactically more insightful arrangement (grouping participials, say, with small clauses and not with other non-finite verb constructions, would be an example of such an arrangement).

However, the other attitude channelizes the focus of this dissertation in a direction which attempts to raise certain theoretical issues regarding the Hindi/Gujarati language pair (H/G hereafter).

The two attitudes, in my opinion, do not clash in a dissertation; rather, they serve to create a completeness -- an apt service in the present case, since this is, after all, a thesis on complementation. The applicability of an enterprise ultimately depends on the degree of descriptive adequacy achieved by the conceptual framework that one is working within and the validity of the theoretical assumptions of that framework.

1.2 OUTLINE OF FRAMEWORK

In this section we concentrate on the choice of framework. The choice of framework is explained in 1.2.1. The next subsection presents an account of the minimalist theory of grammar.

1.2.1 As we saw in 1.1.3, raising theoretical issues immediately brings up the question of framework. This dissertation is unambiguously within the generative paradigm. I have chosen the
current version of this paradigm which seemed most appropriate for this work in that it has a certain in-built freedom which is necessary when working on relatively uncharted grounds. H/G, especially Gujarati, are by no means exhaustively researched. In such a case, the paradigm one chooses to work in should be flexible to the point of near self-destruction. Without requiring quite so extreme a measure as that, it has been necessary, in this study, to modify the framework in instances where new ideas need to be introduced and several old ones replaced.

To go into the historical development of the generative paradigm would be an impossible and, in the limited context of this dissertation, unnecessary task. Taking the general assumptions that look at languages in terms of principles and parameters as a working hypothesis, I will, in the rest of this section, outline the more recent developments in this approach. Again, it is beyond this dissertation to summarize all aspects of these developments. Below I present an outline of the minimalist theory of grammar which is sufficient for the purpose of the analysis that follows. The ideas presented here are mainly those found in A Minimalist Program of Linguistic theory (1992) and Bare Phrase Structure (1994), henceforth referred to as MPLT and BPS respectively.

1.2.2 One of the major considerations that has guided the generative enterprise into its present "minimalist" design is, I think, economy. The assumption in early TG literature was that the evaluation criteria selected a particular "grammar" on
grounds of economy etc. The central notion of evaluation criteria has slowly been displaced over the years; in the carefully constructed theory of GB (or the principles-and-parameters approach, as Chomsky would have us call it) such considerations are redundant. The principles of UG are themselves so specified that any interaction of what Chomsky calls PLD (a set of primary linguistic data) with UG (Universal Grammar) will fix the parameters of a given language, obviating the need to "select" a "grammar" for that language.

As Chomsky points out in MPLT, however, the economy principles that seem to be discarded by GB practitioners can be reformulated in terms of minimalism. Essentially, a minimalist approach aims for a theory of language in which a given construct is regarded as an object with formal properties that optimally meets the requirements of the PF and LF components, in other words, by satisfying the economy conditions of UG. A detailed exposition follows.

Within the minimalist framework the importance of the PF and LF levels is highlighted given the absence of the other levels -- the D-structure and the S-structure. How then does a derivation get its sound and meaning interpretations? In the minimalist approach, a derivation is said to converge at either PF (where the derivation reaches as a result of the operation SPELL-OUT) or LF, if it meets the conditions of PF or LF. It converges if it converges at both PF and LF, otherwise it crashes, i.e. is not interpretable. SPELL-OUT is applicable at any stage, and the
derivation converges or crashes at PF depending on whether it has met the PF conditions. One thing we notice from this is that PF and LF do not interact, a derivation can converge at either level. However, only when certain economy principles (like conditions of locality of movement, condition of necessary steps (no "superfluous" steps to use Chomsky's words)) are met does a convergent derivation result in a linguistic expression.

Going back to the question of what a linguistic expression is, above, we see that the minimalist assumptions allow us to define it solely in terms of optimal interpretation at PF and LF -- there is no need for other levels like D-structure and S-structure which earlier "prepared" a derivation for correct interpretation, so to speak.

With a reduction in the levels, it is all the more necessary to have some means of making lexical items accessible to the system which computes the derivations. For this, Chomsky assumes X'-theory to be fundamental to the framework. The actual design of X'-theory is simplified and consists of heads and their projections. A great deal of importance is given to the basic relations, two major ones in the simplified X'-theory, Spec-head and head-complement, both "local". We discuss these two in detail below.

Chomsky considers the head-complement relation to be the basic relation between categories; it is also the more local of the two. In this way, any relation which is not a head-comple-
ment relation is a Spec-head relation.

Other local relations (only local relations are considered in a minimalist approach) are the head-head relation (for example, the relation of a V to (the head of) its NP complement (selection)) and "chain link". Specifying these local relations obviates the need for other relations such as government found in the principles-and-parameters framework. This is a major departure from earlier beliefs about the interaction of linguistic categories. If government is no longer a central notion in the theory, the phenomena accounted for by the interaction of the different modules such as Binding, Case etc. with government must be handled by means of an entirely different mechanism.

The working out of such a mechanism would be an interesting exercise. We restrict ourselves however to the reformulation of Case theory since the other modules like Binding do not bear on the analyses offered in the rest of this work. A major change in Case theory is in Case assignment to the object position. The earlier practice was to have the subject enter into a Spec-head relation for getting structural Case while the object was assigned structural Case under government by the verb. In the minimalist approach all structural Case assignment takes place under the Spec-head relation. Assuming binary branching and Pollock's (1989) version of the split INFL hypothesis, Chomsky
provides a basic clause structure as follows.

\[ \text{MPLT makes a crucial move here. Both agreement and structural} \]
\[ \text{Case are an outcome of the Spec-head relation (NP, AGR). Case is} \]
\[ \text{handled in a slightly different manner: the properties of T and V} \]
\[ \text{determine Case. The Case-feature bearing heads are Finite T,} \]
\[ \text{which has nominal Case features. Infinitival T bearing Null Case} \]
\[ \text{features fa detailed discussion follows later), and certain V} \]
\[ \text{bearing Acc Case features. So we have T raising to AGRg and V} \]

\[ \text{I have modified the structure slightly, adding [SPEC, TP], which} \]
\[ \text{Chomsky mentions as a possible position, and placing the} \]
\[ \text{heads in final (right-hand) position as the languages we are} \]
\[ \text{working with. Hindi and Gujarati, are head-final. Order is} \]
\[ \text{anyway irrelevant as Chomsky mentions in MPLT.} \]
raising to \( \text{AGR}_0 \) as indicated in (1) by arrows.

Of special interest to us is Chomsky's treatment of ECM. Again, having no government module to appeal to, the mechanism for ECM involves raising of the relevant NP to the Spec of \( \text{AGR}_0 \). See section 3.4 and ch. 4 for an analysis of ECM types.

Thus, we see that AGR plays a central role in both agreement and Case relations. The Null Case hypothesis gives neat results, as we shall see in chapter 3. Instead of a government vs control explanation for the subject Case of complement clauses, with all its problems concerning the PRO/pro controversy, we now have an account based on the feature content of \( T \) for an MPLT treatment of PRO. \( T \) is richest in semantic content when it has Nominative Case features, followed by Null Case features, and is the most impoverished when it has no Case features (as in ECM clauses (but see 3.4. for a different view)). The Spec-head relation establishes the configuration in which the Case on the subject is determined if the subject moves into the Spec of the \((V^+T+\text{AGR}_5)\) complex where \( T \) has Nominative Case features. It "checks" for Nominative Case against the nominative head and receives the necessary morphology in order to converge at PF. If the subject moves into the Spec of a Null Case bearing \( T+\text{AGR}_5 \), it receives Null Case; and so on.

The configuration that we mentioned above under which Case is assigned is actually much more rigorously defined in MPLT. Essentially Chomsky uses the familiar notion of domain -- a
domain of a head consists of all the nodes of the maximal projection of that head, apart from the head itself. The categories which are locally related to a head may form a minimal domain for that head: a minimal complement domain if dominated by the complement; a minimal checking domain in all other cases. The minimal complement domain thus comprises the internal arguments of the head. The minimal checking domain is the configuration we are right now interested in as it contains the non-argument Spec positions into which an NP moves and is checked off for Case against the head. To return to feature checking, let us look at the functional elements T and AGR in greater detail. As we have seen, the verb gives its features to T and AGR. These "borrowed" features, called V-features, check the morphological properties of the verb selected from the lexicon. This can be generalized to all lexical items whose features can be L-features. Now, a position that is locally related to a L-feature is an L-related position. In a checking domain, the Spec positions are known as narrowly L related and other adjoined positions are broadly L-related. Any structural position that is L-related has argument properties while a non-L-related position has non-argument properties. Similarly, the D head of DP has N-features, incorporated from the noun. Thus just as the V-features of T or AGR check properties of the V that raises to the T or AGR, N-features of T or AGR check the properties of the NP/DP that raises to the Spec of the T+AGR node. This ensures the agreement between the NP/DP and the verb. In other words, Chomsky's suggestion is to assume that the morphological features of both verbs and nouns must be checked either in the T+AGR head, or at the Spec of T+AGR. Both
kinds of checking can take place at any stage of a derivation to LF.

We have said that noun phrases typically move for Case reasons and verbs raise to higher nodes for feature checking. This brings us to movement in a minimalist framework. We may mention here that Chomsky considers the elements in a representation to be chains. In an attempt to choose between two kinds of economy considerations -- shortest movement as against minimum steps in a derivation -- Chomsky introduces Form-Chain, which replaces Move-α as the single transformation of the grammar. Raising constructions, for instance, would be derived not by moving the embedded subject out and up to the matrix position, either in short moves resulting in a number of derivations or in a long movement resulting in a single derivation, but by the operation of Form-Chain, which yields the desired derivation in a single step.

We come now to a question familiar from the earlier versions of the principles-and-parameters mechanism: at what stage does movement take place in a given derivation. The question is all the more interesting now that the levels of D-structure and S-structure are not necessary for the interpretation of a sentence. In MPLT Chomsky proposes the principle Procrastinate according to which overt movement is less economical than LF-movement. Essentially, a derivation converges with as minimal activity as possible in overt syntax. In other words, if movement is not required for convergence, economy principles disallow it in overt syntax.
-- it is then procrastinated to LF for interpretation. In languages like English, Chomsky points out, overt raising (of \texttt{NP} to \texttt{SPEC AGR}_0 or of "\texttt{V to I}"), is unnecessary for convergence and therefore does not take place.

The distinction between "strong" and "weak" features, essentially a contribution of Pollock (1989), further constrains the range of choice for otherwise optional processes. "Strong" \texttt{V}-features are visible at PF while "weak" \texttt{V}-features are invisible. In order to converge at PF, therefore, "strong" features should be absent after SPELL-OUT, else the derivation crashes. Let us illustrate how this affects movement. Suppose the \texttt{V}-features of \texttt{AGRQ} are strong. Then, the verb must raise overtly and ad.l0.in to \texttt{AGR}_0 in order to be checked. The \texttt{V}-features do not remain once they have checked the verb and the derivation converges at PF after SPELL-OUT. If the \texttt{V}-features are weak they are invisible at PF. The verb then moves to \texttt{AGRQ} at LF following the principle Procrastinate. The strength or weakness of these features is a parameter, for example, the French \texttt{AGR} has strong and the English \texttt{AGR} has weak \texttt{V}-features.

The above is a rather sketchy outline of the MPLT mechanism. As we proceed with the analysis in the following chapters the actual working of this mechanism will be made clearer.

1.3 \textbf{CHAPTER OUTLINE}

Apart from the chapter outline in 1.3.3, a note concerning the mode of exposition for the two languages, Hindi and Gu.\text{iarati},
is provided in 1.3.1 and transcription details in 1.3.2.

1.3.1 This dissertation does not aim at a comparison of Hindi and Gujarati. The treatment of the H/G language pair, therefore, is impartial with regard to the example sentences provided. I would like to add that there is a general assumption throughout the dissertation about the similarities in data between Hindi and Gujarati. This assumption underlies what may seem to be negligence in sustaining an equality in the number of examples and the presentation of the glosses (one gloss is often used for both Hindi and Gujarati examples). Similarly, at many points in the arguments I have assumed, but not necessarily mentioned, that what apply (or does not apply) to one language applies to the other also. In short, throughout, the attitude taken is that, unless specified the two languages are, for the purpose of the analysis presented in this dissertation, to be taken as one. Needless to say such an assumption is empirically borne out.

1.3.2 While every effort has been made to keep the transcription and conventions consistent, some errors have doubtless crept in. I hope the following will help disambiguate matters.

Cases begin with upper case; the same word, if not used as a Case but as a description of a category or relation, may begin with either upper or lower case. Abbreviations of linguistic terms in glosses are in upper case; they are often, but not necessarily separated from the word to which they attach by hyphens.
Note on Transcription

T D S N L are retroflex. R is a retroflex flap. c is laminoalveolar. M after a vowel denotes nasalization of the vowel. Vowel length, represented only for /a/ and /i/, is denoted by doubling the vowel. The nasalization of the final /u/ in Gujarati has not been consistently shown, for ease of exposition.

1.3.3 Given below is a brief outline of chs. 2 to 5. Chapter 2 deals with finite complement clauses in Hindi and Gujarati. The major issues taken up in this chapter are (i) the nature of ki and (ii) the non-canonical position of the finite complement clause. This is a phenomenon common to several Indo-Aryan languages, as well as to certain Germanic languages, as is evident from the discussion. We report a number of accounts regarding this phenomenon. A controversy exists over the occurrence of the finite complement clause to the right of the verbal head. Essentially, the complement clause could either be base-generated in that position or adjoined to the matrix verb by means of extraposition. I argue that the complement clauses in H/G are extrapoosed to the right in order to be licensed by the matrix verbal complex. Issues of adjacency, directionality of government and theta-marking will be discussed in the course of this chapter.

Chapter 3 deals with non-finite complement clauses. It is a fairly exhaustive account; the three main sections deal with gerunds, infinitivals and participials. We will situate our
discussion of gerunds within the MPLT framework, which we will modify in order to account for the H/G kaa-naa constructions. We then discuss infinitivals, that is, complement clauses with a postpositional complementizer. Using Kayne (1984) as a point of departure, we will account for the null subject in infinitivals and postulate a phonetically null P/C in Hindi and Gujarati. This chapter also throws light on certain difficult-to-classify constructions, thereby contributing to the debate on "nominal clauses".

Small clause complements are discussed in chapter 4. The interesting fact about small clauses in H/G is that the subject of the construction is assigned Accusative Case. In this chapter we will review two major contributions to this issue, Mahajan (1990) and Sinha (1991). We will attempt to reformulate the hypotheses offered in these two works in order to account for the alternative range of interpretations that are available due to factors of animacy, specificity and definiteness.

Chapter 5 is a lexicographic exercise. Essentially, the aim is to provide a working bilingual dictionary for a closely related language pair. In this chapter we will present the agreement patterns available for verbs in H/G. The main purpose of this chapter is to collate information for designing a specific-purpose dictionary, a sample of which will be presented. An index of complement selecting verbs in Hindi and Gujarati is provided at the end of the chapter.