CHAPTER I

INTRODUCTION

1.0 Where Clause Meets Film Theory

Béla Balazs, the Hungarian-born film theorist, put forward in the early 1930s, a rather strong hypothesis regarding subjective identification - a notoriously difficult theme in film theory, and art theory in general:

In the cinema, the camera carries the spectator into the film picture itself. We are seeing everything from the inside as it were ...

Thus the spectating activity itself involves a process of identification with, among other things, the camera -- a process producing a coincidence of the gaze of the spectator with that of the camera.

Within the context of films, Balazs' theory actually runs into problems since it presupposes a consistent and uncontradicted use of the subjective camera. It suits our purpose, however, to use a film-theoretic concept such as Balazs' initially as

1. But it was published only in 1972
a metaphor, to take an exploratory look at the ways a clause unfolds itself as a microcosm of the totality of the linguistic experience of the speaker/spectator.

Very soon, however, we abandon the mere metaphoric use of the concept of the camera and we launch the camera angle view as a theoretical construct in Chapter II where we also explore the crucial concept of the field of view of a sentence as it figures within the context of discourse. The image of a field seems to lend itself better to the entirety of the organizational logic of the kind of theory we advance.

For certain realist film theorists (Bazin (1967), Kracauer (1979) et al), the screen was taken to be a window through which one could see reality. Later versions of their paradigm, more focused on form, took it as a frame which organizes the visual space and within which the spectator's attention is directed to certain areas of this two-dimensional surface.

What we gain from interfacing with this version of screen identification is our discovery and (later) use of the notion of staging/dramatization involved in such a framing. Suspending the implicit politics (crucial to film theory people) of staging associated with such presentations, we obtain a crucial hold on
the interplay between the structure of a clause and its pragmatic underpinnings by the introduction of a concept of staging in linguistic theorization.

Lacanian theorists use the mirror as a metaphor for the proper characterization of the screen and suggest that identification with the camera be called primary (in contrast with the secondary identification with person-figures). For most French theorists this camera identification was central and thus the spectator identifies less with what is represented than with what stages the spectacle, brings it to visibility (Baudry 1986). In spite of the demetaphorization of the camera that we attempt later, it is still a far cry from a Lacanian concept of spectating where the spectator is supposed to identify him/herself on the screen. The dose of film theory we import into our attempt to understand the interplay of syntax and pragmatics in the context of a clause stops at the formalist tradition. We, however, appropriate the French theorists' emphasis on the centrality of the primary identification to the extent that we use staging as a conceptual tool for clausal analysis.

1.1 Tracking a Shifting Scene

Our understanding of major themes like transitivity (Chapter II), agreement (Chapter III) and classification (Chapter IV) that we take up in this study, needs to remain in touch throughout
with the specific task of the clause — which 'stages' events and, as a special case thereof, actions. The fundamental problem of this thesis is, therefore, to track a shifting scene down the lanes of a discourse so that connections available in the tacit knowledge of language users can be made explicit.

As we shall outline in detail in Chapter II, computational work on transitivity in effect involves looking at the ups and downs of "saliency" in a clause. There are both soft and hard options of evaluating saliency and the eby laying bare the anatomy of transitivity. Saliency shapes our route to the heart of the problem of clause structure. The problem as we pose it bears on the familiar issue of anaphoric search/ referential tracking. Our issue therefore becomes a subproblem of an item on the mainstream agenda.

When focusing on the recalcitrant core of this problem of anaphora resolution we see that anaphors send us back to potential antecedents exhibiting weaker or stronger degrees of resolution (in a what is nearly a visual sense of the term). The only efficient way to study strongly resolved and thus exactly defined vs. weakly resolved and thus diffuse nominal entities is to begin with a study of various formal asymmetries that give grammatical shape to saliency differentials. These themes converge
finally on a crucial opposition of natural language, that is of the new versus old information — the single most important concept that drives the present work. The new/old distinction operates in various guises throughout the body of this dissertation, one of which is the Novelty Familiarity Condition of Heim (1982) — discussed in connection with anaphora resolution within the context of a version of File-change semantics in Chapter II. The Novelty Condition in its barest form (which applies specifically to indefinites) looks like the following:

(1) **Novelty Condition**

An indefinite NP must not have the same referential index as any NP to its left

(1) implies that an indefinite must always carry a **new** referential index. The condition applies regardless of the distance between the two NPs as long as they occur in the same text/discourse session. The Novelty Condition, for example, rules out a coindexation of the definite with the indefinite in (2) but does not apply in (3).

(2) *He likes the cat, and she hates a cat*

(3) He likes a cat, and she hates the cat

(Heim 1982)

This is because an anaphoric reading of the definite is acceptable. We discuss the generalities of the new/old opposition in
section 1.2.

A quick glance through the following section will clarify our preoccupation with the investigation of a series of asymmetric dyads like Topic/Focus, Subject/Object etc. collectively under the rubric of a basic Trajector/Landmark distinction. Implicit in such a strategy is that it obtains for us, with growing efficiency, a program for tracking a shifting scene within the discursive context. These asymmetries, we hope to show, advance our understanding of the new/old distinction at each level in the life-span of a clause in a discourse. The new/old opposition, therefore, is for us a tool for tracking down the modalities/behaviour of a scene.

NP to NP connections, as an unrevised Novelty Condition might suggest, however, are not an efficient way to do the tracking. Many of the NPs such a procedure would need are not available in the text. Why should NP to NP tracking not be the game to pursue? We believe that the answer lies in the way linkages between sentences are established. A linking of, for example, S1, S2, S3, ... Sn is established by the clumping together of situations. For example, in (4) below such gestures is a clump expression which refers to all of the previous sentence and not
just a part of it.

(4) John welcomed the cat back home, such gestures will make Felix happy

There is no way of telling by looking just at the NP such gestures that it encodes within its meaning the whole of the preceding sentence. In case of deictic pronouns also it is not just one NP that is hidden somewhere in the earlier text, rather, a general clumping takes place.

1.2 New versus Old Information

We mentioned in the previous section that a proper understanding of the new/old opposition through various asymmetries (reflexive of resolution differentials) is the major underlying objective of this study. In fact, the computational claims of this dissertation become valid in light of the present attempt to clearly state the status of new/old information within the overall structuring of scenes in a discourse.

Mainstream linguistics has for most part refused this topic a theoretical status save some salient exceptions like Vilem Mathesius and Jan Firbas. Researchers in the field of AI on the other hand have picked it up in a big way to explain a number of

1.Firbas (1966) and Mathesius (1967) as quoted in Chafe (1970)
important linguistic facts.

In any speaker/hearer exchange there are regularly some items of information which are new — information exchanged between the speaker/hearer pair for the first time. It is also the case that some of the information is typically old; shared information — either already uttered or of common knowledge about the world. Consider the following:

(5)a. The blouse is red
   b. The blouse was red

(5a) might be used in a context of having encountered a blouse where the new information that the blouse is red is added. In (5b), primarily because of the tense, it is likely that the blouse was, in some past time, already an established object of which a new information that it was red is being communicated at the time of the utterance of (5b). In a model like that of Chafe's (1970) where sentences are a complex configuration of semantic units, we note that a repetition is hereby committed in stating that red is now in both a and b. A suitably modified Novelty Condition which includes generic indefinites in its range can give a straightforward analysis in terms of the new/old dyad.

1. In connection with the Prague School theory of markedness it is often stated that no more than 17% new information should be encoded for communication to succeed.
in addition to the fact that definite always encodes old information.

As we mentioned earlier, this new/old distinction underlies most of the other dyads we investigate like Topic/Comment, Subject/Object, etc. For Chafe (1970) new is a specification added to a particular semantic unit within a verb or a noun, not to the whole verb or noun. This also provides a way of distinguishing certain mechanisms that have to do with new/old information. In English one often encounters an intonation where a reasonably flat contour generally carries the old information and items carrying any new information are generally spoken with higher pitch. A higher pitch and amplitude are tools used for highlighting. We make use of this phonological concept later in section 1.3.2.3 to theoretically construct the property of double-strike related to focus constructions. In (5), the new information is given the highest pitch. The correspondence, however, should be thought of only as approximate.

Our contention that asymmetries only serve to obtain for us a pattern of distribution of new/old information, becomes firmer when we see that in (6) below the asymmetry within VP that we point out in section 1.3.4 is exhibited in terms of the fact that in (at least) marked sentences only the verb contains new infor-
(6) a. It is raining
    b. The glass broke
    c. The child cried

In all these sentences the verb marks the new information, the single noun, wherever present (b, c), carries old information.

With more than one noun per sentence, the situation, however, changes:

(7) a. The blouse \textbf{is} \textit{in} the closet
    b. Floyd broke the glass

In (7), new information is associated with the final noun which also carries the highest pitch. Chafe (1970) points out that to understand the meanings of these sentences fully would imply ascribing newness to the verbs as well although the latter are not given high pitch. From this, he constructs a hierarchy for the assignment of a feature like new, consisting of location, patient, beneficiary, and agent. There will be only one noun per sentence which is not new and this noun will be (looking at the hierarchy from the other side):

- the agent if there is one
- the beneficiary if there is one without an agent
- the patient if there is one without either an agent or a beneficiary

- the patient if there is also a location

Given the word order in English, Chafe derives a left/right asymmetry from this where it can be seen that new information is on the left whereas the old information is contained only within the one noun which is farthest to the right.

An alternate space where the new/old distinction is of equally crucial importance is in the realm of the pragmatic/semantic conditions that determine the choice between a definite and an indefinite NP. Christopherson (1939) identified the function of definiteness as the signaling of an NP with which the audience is already familiar at the current stage of the conversation. An indefinite NP is used to signal a unfamiliar or novel referent. Familiarity theories of definiteness staged revivals in various forms in linguistics and Artificial Intelligence research but the interest diminished when the thesis of reference as a basic function was questioned. Karttunen (1968) proposed his "discourse referents" (further details provided in Chapter II) to be the bearers of novelty/familiarity properties and thus succeeded in disengaging familiarity from reference. Heim (1982) introduced the construct of "file cards" which achieved a similar dissociation between familiarity and reference.
The Novelty Condition as stated in (1) is different from traditional familiarity theories of definiteness in the sense that *indefiniteness* is a sufficient condition for novelty, but is not a necessary one. A deictic use of a pronoun, for example, is a case of a novel definite. Heim (1982) revises (1) to make indefinites necessary as well when conversation is viewed as a file-keeping activity. In her file-change semantics, the Novelty Condition translates into the following:

(8) For every indefinite, start a new card; for every definite, update a suitable old card

Let us see what (8) exactly means in Heim's theory and how it relates to novelty versus familiarity with respect to the logical form.

Heim defines truth of a file in terms of a recursive assignment of satisfaction conditions to formulas based on a Tarski notation. Satisfaction is a relation between an infinite sequence of individuals on the one hand and formulas on the other and is always relative to a model. A model for English is a pair

1. LF for Heim is a *disambiguated* extensional representation which resembles LF of REST as well as the analysis trees in Montague grammar.
<A,Ext> \text{ where } A \text{ is a set of individuals and Ext is a function which assigns an extension to any predicate of English so that, if } \& \text{ is an } n\text{-place predicate, then } Ext(\&)CA_1xA_2\ldots r'_{n}.\]

We want the rules of semantic interpretation to assign satisfaction conditions to formulas of LF. For a given formula \( \phi \) the rules should tell us which sequences satisfy \( i \) with respect to a particular model. That is, rules of interpretation should define the relation \( x \text{ sat}_A Ext y \) to be read as "\( x \text{ satisfies } y \text{ wrt } \langle A, Ext \rangle \)."

Once files are defined in terms of satisfaction sets, it is rather difficult to know either the actuality or the quantity of the cards they contain. For this reason Heim defines the domain of a file. But first, to determine the truth of a file, we need to find a set of individuals that satisfies it. A sequence fits if the first member fits Card 1 and so on. For example for the conversations in (9), in file F there are two cards with the entries as in (10).

(9)a. A woman was bitten by a dog

b. She hit him with a paddle

c. It broke in half

d. The dog ran away

(10) Card 1 : "is a woman", "was bitten by 2"
Card 2: "is a dog". "bit 1*

Now consider the sequence $a_N$ with the following members:

(11) $a_1$: is a woman
      $a_2$: is a dog
      $a_2$ bit $a_1$

$a_N$ as a set satisfies $F$. Any segment whose first member is not a woman or whose second member is not a dog or whose second member did not bite the first member, would fail to satisfy $F$. At least one segment has to be consistent for the file to be true.

Various stages of the conversation are as follows:

(12) $F_0$: before anything has been said
     $F_1$: after (9a) is uttered
     $F_2$: after (9d) is uttered

Notice that $F_0$ - $F_1$ are different files. Satisfaction sets of segments for each of these files are as follows:

(13) $F_0$: $A$ (set of all segments whatsoever)
     $F_1$: $\{a_N: a_1$ is a woman, $a_2$ is a dog, and $a_2$ bit $a_1\}$
     $F_2$: $\{a_N: a_1$ is a woman, $a_2$ is a dog, $a_3$ is a paddle, $a_2$ bit $a_1$, and $a_1$ hit $a_2$ with $a_3\}$

Heim (1982) calls the sets (on the right) "satisfaction sets" and indicates them as $\text{Sat}(F_0)$, $\text{Sat}(F_1)$, $\text{Sat}(F_2)$, etc.
The LF corresponding to (9) is as follows:

![Diagram of LF structure]

(Heim 1982: 279)

S in (14) here is the LF of (9b); we can calculate the satisfaction condition as follows:

(15) \( a_N \text{ Sat } S \) iff \( a_3 \) is a paddle and \( a_1 \) hit \( a_2 \) with

With this, the change from \( F_1 \) to \( F_2 \) is stated as:

1. In order to include intersentential anaphoric resolution, Heim considers expressions larger than sentences, namely, texts and a rule of Text Formulation says:
   
   Attach a sequence of \( S^5 \) under a T-node

2. A rule of existential closure adjoins a quantifier to the nuclear scope of every quantifier and indefinites are quantified expressions for Heim. The indices indicate binding possibilities.
In general, a satisfaction condition relates to file-changes as follows:

\[(17) S(F') = Sat(F) \cap \{a_N: a_N \text{ Sat } 4\}\]

where $\&$ is the LF of $S$ and $F/F'$ are files that obtain before and after a particular utterance.

Now, the inability to identify and determine the number of cards in a particular satisfaction set of a file prompts Heim to propose the notion of the domain of a file. The domain of $F$, $\text{Dom}(F)$, is the set that contains every number which is the number of some card in $F$. For example, in relation to (9), the following are the domains of files $F_1$ and $F_2$.

\[(18) \text{Dom}(F_1) = \{1,2\}\]

\[\text{Dom}(F_2) = \{1,2,3\}\]

Addition of a new card (as mentioned in (8)) can now be stated as follows:

\[(19) \text{The change from } F \text{ to } F' \text{ involves the addition of a card number } i \text{ iff } i \in \text{Dom}(F) \text{ and } i \in \text{Dom}(F').\]
Now **novelty/functionality** is defined as follows:

(20) An NP is novel with respect to a file if its index $i \in \mathbb{E}\text{Dom}(F)$ and is familiar with respect to $F$ if $i \in \mathbb{D}\text{OB}(F)$.

Let us now see how **deixis** interacts with familiarity. Neither a deictic use nor an anaphoric use is possible with indefinites. That is, both deictic and anaphoric references are familiar to the audience. In terms of the file this is taken care of by some already existing file card. But what about familiarity due to contextual salience? **Heim** assumes that even such NPs are represented by a file-card. This implies that a file must be able to add a new card without anything being altered. For us this means what is contextually salient must be somehow reflected computationally. The algorithm designed should be able to be sensitive to any changes in the context of a conversation.

**Heim's** example is that of a dog walking in the Diddle of a conversation. The state till then is $F$ and suppose $7$ is the index of the dog such that $7 \in \mathbb{E}\text{Dom}(F)$. Then $F'$, the new file, will be: $\mathbb{D}\text{om}(F') = \mathbb{D}\text{om}(F) \cup \{7\}$. Suppose now at $F'$ one of the participants, say $A$, says *It is going to bite*. *It* here will then carry the referential index $7$. $F'$ will then become $F''$ where the satisfaction set is:

$$\text{Sat } (F'') = \{ a_N: a_N \in \text{Sat } (F') \text{ and } a_7 \text{ is going to bite} \}$$
The reference of *it* therefore, is deictically determined and represents the contextually salient dog.

This prompts Heim to conclude that an NP can be novel with respect to the LF and yet be familiar with respect to the file. This leads her to propose the revised Novelty Condition as a Novelty-Familiarity-Condition:

(21) Suppose something is uttered under the reading represented by *i*, and the file prior to the utterance is *F*. Then for every NP\(_i\) in \(\Delta\), it must be the case that: \(i\)EDom (F) if NP\(_i\) is definite, and \(i\)EDom(F) if NP\(_i\) is indefinite. Otherwise, the utterance is not felicitous under this reading.

As we show in Chapter II, it is possible to integrate this aspect of contextual saliency in a Kamp/Heim model effectively by introducing the theoretical construct of a field (of vision) which is based on our film theoretic import into linguistics of a camera angle view. With such a move, we will note that it is possible then to record (in a photographic sense) the world of a sentence before its utterance based on the context of the conversation till then or in other words, the current states of the file.

1.3 Asymmetries

We mentioned in section 1.2 that the new/old opposition approximately derives a left/right asymmetry for the trajector/
landmark dyads under scrutiny. For a distinction like Topic/Focus, we expect that salience (which motivates the study of transitivity) would play a role in terms of redefining or reinterpreting various interactions between the Topic/Focus opposition and salience since both are, to some extent, matters of pragmatic functioning. For an opposition like subject/object one would not expect such interactions to take place. That is, we would expect that subject/object should work independently. But this is not the case; subject/object reorient themselves in a fashion similar to the other dyads and participate in a right grammar versus left grammar opposition to the same extent. Externality of subject is a major force in such participation. More importantly, this alignment of the subject/object opposition with the Topic/Focus opposition unwinds the basic A/A' distinction that forms the basis of much preminimalism work. Whether this is desirable is not very clear at this stage but as we note in Chapter III, it is, nevertheless, possible to derive a typology of positions (in terms of actually-L-related positions) if we adopt a version of the checking theory which stands to gain from a computational approach to the study of gaps and fillers.

We mentioned earlier that if our goal is to track a shifting scene down the lanes of discourse, the nearest station for us is one at which a coarticulation of the various asymmetries that a clause display both within and outside the clause becomes possi-
ble. In short, asymmetries serve to create fluorescent zones for the tracking of a scene to proceed efficiently.

A crucial claim of this chapter is that the asymmetry displayed at the Topic/Focus opposition leaves its shadow all over the clause. In other words, the basic asymmetric pattern is maintained throughout the body of the clause. In fact, only through such repetitive patterns can an efficient tracking take place. We will see later how this asymmetry becomes important for staging to occur. Tracking also makes use of, as we stated earlier, a strong/weak distinction of resolution valency in terms of increasing/decreasing salience. This will result from a better understanding of the asymmetric system around the clause.

In this connection, let us consider the Larsonian asymmetry that works in terms of pervasive one-way c-command. Larson (1988) showed that the underlined NPs in the following double object constructions are in the domain of the first NP but not vice-versa:

(22) John sent Mary a letter

(23) I promised Felix a new set of golf clubs

(Larson 1988)

Barss and Lasnik (1986) (as cited in Larson 1988) point out the
problems with available structure for the double object construction. The Chomsky (1981) structure is as follows:

(24)a. \[ \begin{array}{c}
\text{VP} \\
\leftarrow \text{V} \\
\text{NP1} \\
\text{NP2}
\end{array} \]

Between NP1 and NP2 in (24a), there is no formal asymmetry here; thus this structure foes against the spirit of double object construction phenomena. In (24b) below, on the other hand, although there exists an asymmetry between the two NPs whereby NP1 is in the domain of NP2 (and not vice-versa), the picture is still al cross-purposes with facts.

(24)b. \[ \begin{array}{c}
\text{VP} \\
\leftarrow \text{V'} \\
\text{NP2} \\
\text{NP1} \leftarrow
\end{array} \]

Larson suggests the following derivation for (23):

(25)a. John [VP a letter [V, sent to Mary]]

b. John sent [VP a letter [V, t to Mary]]

In (25) the indirect object Mary becomes the derived VP "subject" and the direct object a letter receives an adjunct status within V. Larson's position, therefore, is that for a VP with V-NP-NP structure, the first NP c-commands the second NP but not vice-
versa. Larson (1988) would posit (26b) as the structure for the sentence in (26a).

(26)a. John gave a book to Mary

(26)b.

Although Larson's proposal makes VP-recursion possible as a result of asymmetric c-command, it nonetheless relaxes the condition for the externality of the subject.

This is the essence of asymmetric c-command. We can extend this notion to state that there are an infinite number of Vs with two NPs asymmetrically c-commanding each other. This also shows, for us, that the subject/object asymmetry pervades all others like Topic/Focus etc.

Conceptually asymmetry makes room for the appearance of recursive strings. Recursion for our purposes, as we shall
demonstrate later, is a matter of discovering of the embedding of scenes within scenes. Only verbs, we will see, can perform this stitching or at least, the crucial or important stitches. Recursion in Chomsky is through a rule schema like \( XP \rightarrow XP \ S \) where \( X=N,P,A \) but not \( V \). Dasgupta (p.c.) as part of the lexology enterprise\(^1\) suggests that in fact, \( VP \rightarrow V \ S \) is the prototypical device for recursion. Only Vs, in their typical function as predicate builders, in any case, can indefinitely extend a sentence structure and underwrite the infinity of sentences.

One motivation for the asymmetries that we discuss — all asymmetries — comes from Kayne's (1994) version of the arrow of time concept. Kayne shows that asymmetric c-command is similar to the dominance relation since both are locally linear. He attempts a closer parallel between the two by assuming an abstract root node \( A \) that asymmetrically c-commands every other node like a real root node which dominates all other nodes. Kayne shows that the terminal \( a \) associated with \( A \) is the abstract initial terminal and consequently a pair like \( \langle x,y \rangle \) would mean '\( x \) precedes \( y \)'. Such a reading of \( \langle x,y \rangle \) implies specifier-head-complement word ordering. The string of terminals in Kayne is are thought of as associated with a string of time slots. This,

1. For a very first introduction see Dasgupta (forthcoming) in *Linguistic Analysis*.
by itself, does not induce asymmetry. Kayne, therefore, claims that what is paired with each time slot is the substring produced till that time. That is, a set of terminals like \textit{abcdz} is mapped to a set of substrings as follows:

\begin{align*}
(27) & \text{ a, ab, abc, abcd, abcdz} \\
(27) & \text{ above begins to show the roots of the asymmetry. Elaborating further, let us consider } t_a, t_b, t_c, t_d, \text{ and } t_z \text{ as the time slots associated with each of the terminals. The assumption in (27) would then result in the following:} \\
(28) & \text{ } t_a = a, t_b = ab, t_c = abc, t_d = abcd, t_z = abcdz \\
& \text{ or } \\
& t_n = S(P_n)n \\
& \text{ where } S(P_n) \text{ is a set of terminals preceding } n.
\end{align*}

Note that in (28) from \( t_a \) to \( t_z \), the set of strings expands and becomes more and more inclusive. In other words, \( t_{n-1} < t_n \) or by (28), \( S(P_{n-1})n-1 < S(P_n)n \). A little reflection here would suggest that \( S(P_n)n \) is a bigger "space" than \( S(P_{n-1})n-1 \). That is, the coverage increases as time progresses. With this, we think the well-known asymmetry between time and space can be approached. Given that both space and time are essential categories of our experience and cognition, an expression of space is optional but it is unavoidable in case of time. This asymmetry
takes a specific shape in Kayne's approach to time and word order. The word order of spec-head-comp is a fallout of the "x precedes y" reading of \(<x,y>\) which in turn is a result of the asymmetry in time.

Conceptually, the very nature of time (its property of progression) imposes the asymmetry - it is inherently asymmetrical. Approximating a simplification, this would mean for current time \(t_n\) there is no way to control or manipulate a chunk of time prior to \(t_n\), namely, the set \(t_1...t_{n-1}\). The fundamental spirit of Kayne's LCA, we think, is that this sequence is equivalent to the set \(S=s(P_1)+s(P_2)+...+s(P_{n-1})\). That is, a sequence of temporality relates to a sequence of spatiality (word order). For our purpose, we conclude from this that the motivation of all asymmetries may well be time given that the latter (unlike nearly all other categories) is asymmetric by definition.

1.3.1 Trajector/ Landmark

We start our discussion with the trajector/landmark distinction since we make use of these functional terms as archi-concepts which underwrite all the major asymmetries to be found in a clause.

Langacker (1983) in his elaboration of space grammar makes
use of certain *dichotomies* like figure versus ground and trajector versus landmark to account for the cognitive *system* we arrive at as we try to understand natural language. Although it is beyond the scope of the present work to explicate the Motivation for his Cognitive Grammar *implementation* of such a programme, it is nonetheless useful for us to investigate how such notions in general, and a modified form of the *trajector/landmark* dichotomy in particular, may be bent to serve our ends in the context of a juxtaposition of the dichotomy between Topic and Focus on the one hand and that between Subject and Object on the other.

We begin, of course, by situating the terms in their Cognitive Grammar habitat. Langacker proposes that meaning and grammar involve elaborate hierarchies of *figure/ground relationships*. The *profile/base, subject/object*, and *head/modifier* distinctions are treated as instantiating a *figure/ground* distinction. The figure within a scene (scene being Langacker's *term* for a situation, in terms of images created to structure a conceived situation – the key to the meaning of an expression in Langacker's theory) is a substructure perceived as standing out from the rest, which is the ground, and is given special salience as the crucial entity around which the scene is organized and for which it provides a setting. The predicate for Langacker is the semantic pole of a morpheme and acts as the basic building block of cognitive functioning.
The grammatical category that most closely Batches Langacker's semantic characteristic of "thing" is the noun. "Relation" is a basic semantic property which describes the grammatical categories of verbs, adjectives, adverbs and prepositions. There are two sorts of basic relations — (i) processes (verbs), which potentially or actually trace the evolution of a process through time, and (ii) stative relations (adjectives, adverbs, and prepositions) which do not.

The trajector/landmark distinction is a fundamental organizing principle for relational predicates and underlies the subject/object distinction. The trajector is the figure within a relational profile. It suggests motion although it applies with equal appropriateness in the case of stative predicates as well. The landmark is the point of reference for locating the trajector the most salient entity other than the trajector itself. According to Langacker, and crucially for us, the location of a relationship reduces to the location of its participants. In our scheme of things, in relation to the discussion in Chapters I and

1. Profile/Base is another dichotomy crucially employed in Cognitive Grammar where the Base for a semantic predication is its necessary context and the profile is that substructure within the Base that the predication designates. The semantic value of an expression is a relation between the two.
II, this would translate into the location of transitivity (a relation) involving the location of the various participants in that relation - most crucially, subjects and objects. This locating activity is \textit{morpho-syntactically} registered by the devices of agreement - the topic chapter III.

The participants in a relation are all profiled. Consider the following for this purpose:

(29)

\[ \begin{array}{c}
\text{e1} \quad \text{********} \quad \text{e2} \\
\text{e3} \quad \text{e3} \quad \text{e3} 
\end{array} \]

In (29) el and e2 are two entities and e3 is the \textit{interconnection} between them. For (29) to be seen as a relation, the participants get "profiled" as follows:

(30)

\[ \begin{array}{c}
\text{----} \quad \text{********} \quad \text{----} \\
\text{e1} \quad \text{********} \quad \text{e2} \\
\text{e3} \quad \text{e3} \quad \text{e3} 
\end{array} \]

Note: Profile is indicated by boldface in (30) and elsewhere.

In case it is perceived as a "thing", e3 is not important which then approximates to zero and only el and e2 are profiled "collectively" to indicate the unitariness of a \textit{nominal} predication. This is shown in (31). Notice that the \textit{interconnection} in a nominal predicate diminishes both in terms of magnitude (it
approaches zero) and prominence or salience (its non-profiled status).

(31)

A relational predication focuses on interconnections and profiles the cognitive events in which the conceptualization of these interconnections resides. The prominence of these events requires giving prominence to the entities involved in the relation. A relational predicate therefore profiles two or more entities in addition to the operation connecting them.

For our purposes, we note that trajector/landmark is a special case of the figure/ground relation and subject/object is a special case of the trajector/landmark distinction. Trajector/landmark gives us a conceptually satisfactory tool to relate the subject/object distinction to other dichotomies.

1.3.2 Topic/Focus

We stated earlier that the specific task of a clause is to present actions and events. One place where this becomes grammatically significant is the position of the clausal topic. The Topic position traditionally is even more external than the
subject, in a sense that one cannot express in terms of notions operative in any serious theory cf grammar. This is because there is discontinuity between the L-related positions of (inner) object and (outer) subject and the non-L-related position of (very very outer) Topic. In other words, there is no formulable continuum of inner-outer on which Topics are outermost, objects innermost, and subjects in between. Rather, the foil to Topic is the notion of Focus, which too involves a non-L-related position. Their non-L-related nature is responsible for lack of a flow of energy between these two (unlike in case subject/object) and the lack of interaction with aspect.

In spite of these differences, there are connections between what we might tentatively — and without attaching significance to these descriptive labels — call subjectology and topicology. For it is clear, from earlier literature, that topics too like subjects have comments predicated of them. Elements in Topic positions like wh constituents in Bavarian display an agreement triggering capability. For such cases, Shlonsky (1991) suggested that CP be split between two functional positions: CP and AgrCP. The latter is an agreement projection belonging to the CP system. This splitting follows from Rizzi (1990) where certain

1. Consequently we discuss this in further detail in Chapter III
complementizers like *qui* are endowed with agreement features. Shlonsky's is a structural implementation of the same idea. Specifically the structure that he proposes is the following:

(32)  
```
CP  
\ /  
C AgrCP  
\ /  
AgrC
```

AgrC in (32) may contain agreement features or certain types of complementizers as in the case of Palestinian Arabic *illi* 'who' which captures the fact that *illi* occurs only in RCs:

(33)  
```
I-bint illi Mona saafat-*(-a)
the-girl that Mona saw-(her)
'the girl that Mona saw'
```

Spec-CP in (32) is an A' position that operators move to whereas Spec-AgrCP may be an A (when AgrC has agreement features) or an A' position. From this we can conjecture that every XP has an overt/covert) AgrXP which in collusion with the former obtains all the agreement facts at XP. Our contention is that topics are similar to subjects in this connection.

Further evidence for the thematic connections between subjectology and topicology comes from the fact that only the lexical head exhibiting transitivity, namely V, can support the paraphernalia enabling topics and foci to appear. They cannot,
for example, occur on the periphery of a small clause built around an AP. Finite INFL allows a Topic more easily than a nonfinite one. There is obviously then some connection between a strong INFL and the appearance of topic. Let us look at the process of topicalization to understand this better.

1.3.2.1 Topicalization

Chomsky (1977) points out a parallelism between a topicalization and a left dislocation construction:

(34)a. John, I like t
   b. John, I like him

The topic in both a. and b. therefore, he proposes, is base-generated in Topic position under S':

(35)

\[ S'' \]
\[ \text{TOP} \]
\[ S' \]

The difference between (34a) and (34b) is accounted for by showing that whereas (34a) involves movement of a VH-operator to COMP (later deleted), (34b) involves no such movement. Chomsky further suggests the rules in (37) based on embedded topicalization examples like (36).
(36) I think that the house, you should see t

Here the topic follows the COMP of the embedded clause and consequently we have (37a) revised in (37b) based on Chomsky (1986a).

(37)a. $S' \rightarrow \text{COMP } S''$

b. $C' \rightarrow \text{COMP TOPP}$

Combining (35) and (37), Chomsky suggests that what undergoes movement is an empty operator. The structure of (36) would therefore be:

(38) $[\text{IP} \text{I think } [\text{CP} \text{that } [\text{TOPP} \text{this house } [\text{CP} (\text{VH}) [\text{you should see t } ]]]]]$

However, Baltin (1982) (as cited in Lasnik and Saito (1992)) pointed out cases of embedded topicalization where embedded left dislocation is not possible:

(39)a. the man to whom liberty we could never grant

b.* the man to whom liberty, we could never grant it

Baltin proposes that (39b) involves a base-generated topic whereas topicalization as in (39a) involves adjunction to S. Lasnik and Saito (1992) show that embedded topicalization necessarily involves IP-adjunction and that matrix topicalization can involve either movement to Spec, CP (as in Chomsky) or IP-adjunction. We
note, however, that C carries finiteness features and therefore topicalization as a movement to Spec,CP can establish the link between finiteness and topicalization that we observed earlier. This, we believe, is true for at least the matrix topicalization cases.

Watanabe (1993), however, demonstrates that the topicalization in English is movement to Spec,CP, including embedded topicalization cases. He looks at the interaction of CP recursion with factive predicates and argues for a Larsonian analysis of CP recursion. He claims that CP recursion is created by substitution movement of C.

We already have a case of CP recursion in (38) as also in the following:

(40) John said [CP that [CP this book, [AgrsP Mary should have read]]]

(Watanabe 1993:121)

An adjunction analysis, as is Baltin (1982) or Lasnik and Saito (1992), or even a modified one in Pesetesky (1989) (cited in Watanabe 1993), is problematic under a checking theory. The checking relation between AgrS and Topic is not clear since AgrS is already responsible for checking off Nominative Case features.
There is no such problem in the CP substitution analysis. Topicalization results if an additional CP, whose head has a feature to be matched with a Topic, is also present.

The CP substitution analysis is motivated in Watanabe (1993) by this notion of clause types:

(41) Clause Types
There are only two types of clauses to be selected by a V, namely, wh-clauses and non-wh-clauses. The former are characterized by the presence of a wh-phrase in Spec of the topmost CP. The latter are characterized by empty Spec of the topmost CP.

(Vatanabe 1993: 130)

By (41) factive complements like (42) will have a structure like (43).

(42) John regrets that he fired Mary

(43) John regrets [CP that [CP Op [Agr-sP he fired Mary ]]]

The topmost Spec,CP is empty since factives are non-wh clauses. Accordingly the inability of factive complements to undergo topicalization is explained.

To link (41) to the proposal in minimalism that a strong Operator feature in C prompts overt raising, we need only add that not only a wh-clause has a wh-phrase in its topmost Spec,CP, it must also have a strong Op feature in the C head.

We conclude from this section that topicalization therefore
is a case of movement to Spec, CP which is expected given the link between topicalization and finiteness that we pointed out earlier.

1.3.2.2 The Pragmatics of Topic/Focus

We stated earlier that nonfinite clauses do not undergo topicalization. Focus, however, can appear with nonfinites. The foil of Topic is Focus which appears only with verbs. For example, PPs do not carry focus. Focus has theta-properties and is related to the NP bearing the theme role of the clause. Theme/patient is somehow connected with action. The initiator/agent looks like an element slightly outside what one needs to know in trying to understand an action.

Although the position of Focus in a clause is not clearly understood, preverbal positioning of it seems to be able to explain a range of facts (like the stress on wh-words in most languages of India). Schaufele's (199C) preverbal focus sits at the (finite) Tense node. Schaufele challenges the Principles and Parameters approach of treating topicalization as a case of movement of an XP category. He shows that in Vedic Sanskrit lexical topicalization takes place prompting a bar-0 A' node called TOPIC to the left of S. The structure of (44) is as in (45).
(44) \textit{manah} \textit{ha vai devaah I} \textit{vp \{NP manuSyasya e\}} \\
\textit{mind-A Prtcl gods-N man-gen} \\
\textit{aa-jaananti} \\
\textit{know-3p pres} \\
'The gods knew the minds of man' \\
\hspace{1cm} (Schaufele 1990)

(45)

He also suggests that TOPIC be treated as a quasi-comp node having its own spec position to allow for whole phrase topicalization.

\textbf{Schaufele's (1990) contributions} to the understanding of the pragmatic aspects of topicalization is noteworthy. The pragmatic connotations of the process lead Schaunfele to consider topicalization as taking place at LF as well since that is where pragmatic interpretations might be thought of as taking place. In Vedic Sanskrit, topicalization \textit{generally} performs the task of highlighting as in the following:
So he introduces him to the RSiis and to the gods.

Schaufele identifies the following **pragmatic** functions of **topicalization**:

1. **Stage-setting**: This is surprisingly similar to our proposal (to be elaborated later in section 1.4) of staging that we claim acts as the site where the pragmatic range (including deixis) of the clause is decided.

2. **Central concept**: Another function of **topicalization** is to restate a concept that has already been identified as central to the discussion. A subtype of this function, as Schaufele states, is the fronting of a word co-referential or otherwise related to the one in the immediately preceding clause that identifies the central concept.

3. **Focusing**: This is identified as the third important function of **topicalization**. It takes the form of highlighting of new information. This is important for our purpose since it relates to our concerns regarding new/old information. It also underpins a certain construal of the status of Focus in relation to the Topic in a clause. Schaufele drawing on his earlier work proposes the preverbal positioning of Focus.

All these functions listed above are useful handles for us to build our thesis of Staging/Scening/Event in section 1.4. **Repetition/recall** of the central concept as a function of **topicalization** coupled with Focus as new information leads naturally into our hypothesis of "double strike" that we develop in the
1.3.2.3 "Double Strike"

We elaborate the issue of FOCUS as it relates to our proposal of double strike. In our discussion of asymmetry in section 1.3 we claimed that the basic asymmetrical relation is preserved throughout the clausal structure which leads to the identification of new/old information. The Topic/Focus asymmetry is the biggest of the clause-structural asymmetries. However, the Topic/Focus asymmetry is a relatively free agent in the sense that there is no independent demarcation involving Case (as in the case of AgrS/AgrO) or theta roles (as in the case of the VP-internal asymmetry) imposing a specific shape on the asymmetry. Topic and Focus, we observe, count as the two ends of the functional foliage (as opposed to the VP trunk) of the sentence and thus encode the distribution of new/old information. One of the functions of topicalization is rephrasing, as we saw in the previous section, of information already known, while focusing is a matter of emphasizing new information. We shall sharpen these functions as follows. Topic, for us, is a point at which the clause weakly re-emphasizes old knowledge, while focus emphatically presents new material. Our theory of double strike is based on the role of emphasis and reemphasis in the making of Topic/Focus. We propose to formalize this role in terms of a
copy relation, in the spirit of other elements of the minimalism package.

Jayaseelan (forthcoming) situates the focus functional head F below AgroP and above VP; end thus an empirical argument in favour of this specific position for FOCUS is made available for the first time. He suggests that F assigns phonological prominence and other semantic (focal) characteristics to its specifier. Dasgupta (p.c., in consultation with Jayaseelan) builds upon this to further suggest that for Gricean reasons, we can limit the work of F to the assignment of just prominence to its specifier, leaving it to Gricean pragmatics to let the semantics follow from such phonology. Dasgupta adds (p.c.) a suggestion, which we adopt, that F does the syntactic job of the matching of its specifier Spec,F and some segment of the VP, and that its phonological job (assigning prominence, as Jayaseelan) can be seen as manifesting this. Specifically we claim that Spec,F contains a copy of the relevant segment of the VP, and the VP copy moves to and merges with the Spec,F copy, producing a merged, doubled, emphatic constituent the way the computer printer's double strike device produces boldface output. Following Dasgupta (p.c.), we adopt this metaphor and speak of Spec,F as a

1. For example, normal volume assumptions lead loudness to be heard as encoding emphasis.
site where such a double strike is requires by F — as the formal property defining its F-ness.

Spec, TOP as we understand it represents some context whether it is (in the manner of Spec,F) mimicking (and thus double striking) some segment or not is left open. In JOHN I like it assigns stress to John and thus, in this case, double strikes a segment of the VP. Therefore, in this instance, the topic site resembles FOCUS in its function.

In Gueron (1984) something similar is worked out. She proposes a decomposition analysis of topicalized constituents at LF to account for the coreference in structures containing topicalized elements like the following:

(47)a. Near him, John saw a snake

b.*Near John, he saw a snake

(Lakoff 1968 cited in Gueron 1988)

In her earlier works, Gueron had suggested a reconstruction at LF which brings back a moved constituent to its trace position. Preposed constituents were analyzed as in LF as either Focus or Topic of S. A Focus constituent is reconstructed in the position of its trace by rule (48)
(48) **FOCUS rule:** In the structure $X_e \ldots e \ldots$, move $X_i$ to the position of its trace at LF.

If reconstruction does not take place, the fronted constituent is interpreted as a Topic of $S$.

(49) **TOPIC rule:** In the configuration $X'' \{s N? \ldots \}$, $X''$ is Topic of $S$.

But such a solution is problematic because it assumes that subcategorized constituents count as FOCUS when *preposed*, while non-subcategorized constituents count as TOPIC. This does not hold for (50), where the fronted constituent is subcategorized yet by the TOPIC rule (49) it is to be counted as TOPIC.

(50) The article John just wrote, he thinks Mary likes.

Fourier (1980) (cited in Guéron 1984) suggested a decomposition of preposed wh-constituents into restrictive (wh; NP or PP complements of $X$) and non-restrictive (lexical elements, $S'$ complements of $X$) and proposed that only the restrictive part of the preposed element be subjected to the c-command rule. This is also shown to be problematic for some cases.

**Guéron's** 1984 proposal retains the idea that the Focus of $S$ is needed for coreference in general and in *topical*ized structures in particular. Preposed constituents are divided into two parts where one part is identified as a Focus of $S$ and the re-
The remainder is the Top c. She also assumes that the Focus constituent contains the head of the topicalized phrase. Therefore, the Focus constituent is the one which undergoes reconstruction at LF.

Following Chomsky (1976) Focus is defined to be a syntactic constituent which is interpreted as an iota operator at the level of LF; it picks out one element from a background set. This is shown in (51).

(51)a. John e I like e.

b. John = x x E {M} I like x (where M is the set of humans)

(Guéron 1984:152)

The focus operator is marked by prominent stress. She suggests that in English, a topicalized constituent is construed both as a Topic and Focus of S. Then Topic fills a double semantic function. Since the rule of predication applies, Topic must denote an individual. The F operator selects one individual/entity from a background set of appropriate elements. There is no contradiction therefore if Focus selects the same individual for prominence as did in the Topic.

The double semantic function of the topmost constituent is explicated as follows. Following Chomsky (1977) Guéron assumes that the Top is coindexed with an empty element in COMP. Guéron
identifies this empty element as a Focus operator. The predication rule coindexes the Topic and the operator which infuses lexical content to the operator so that now it can be seen as an argument. The topicalization now nondistinct from the operator is reconstructed at LF. The steps in the derivation are illustrated below:

(52)a. John we like

b. S-structure:
   John, e, we like e.
   TOPIC FOCUS

c. Output of predication rule:
   John, e, we like e.
   TOPIC FOCUS

d. Output of reconstruction:
   John: e, we like John.

This sense of similarity of Topic/Focus as in (52c) above is incorporated in our double strike hypothesis.

In Gueron (1984) something like this is worked out, i.e., there are contexts where TOPIC=FOCUS. But in Gueron a position for FOCUS is not worked out or, to be precise, her account does not need a position.
The F project: on therefore reduces to hosting a copy of part of the VP. In the case of the Topic, we might, for all practical purposes (modulo the detail that if C and TOP are separate then C is higher up and consequently Spec,TOP is not the leftmost), consider its Spec as the leftmost. And TOP, as we said represents part of the context — where context is a term broad enough to allow for the possibility of occasionally being a part of the VP also. In other words, TOP leaves us free to pick up an item from the previous context or a part of the VP. Importing the pragmatics of the FOCUS operation, we might then say that, in such instances, the Spec,TOP also undergoes double strike. Spec,F, as we noted earlier, is always a double strike position. From this we conclude that the property that Gueron talked is best formalized in our account as the property of double strike.

We see, then, that a formalism for double strike is worth developing; the notion that an emphasized item is present in two locations is thematically well-founded and deserves to be turned into an operationally explicit account. Now, Minimalism is all set for such a venture, being a framework that uses the exact duplicate mechanism for various (especially movement created A-bar) dependencies.

The contextuality of the copy story can be seen from the
formulation of the copying theory of reconstruction that animalism constructs, where syntax can be thought of as keeping track of what is happening in the body of the sentence through these copies.

With the assumption of copy theory of movement (Chomsky 1995), a two-element chain is a pair \(<a, fi>\) where \(a = 6\). Consider the following derivation:

If \(K, L\) are sets denoting objects in (a) and (b) respectively then \(K = \{\beta, \{\beta, a\}\}\) and \(L = \{\beta, \{a, K\}\}\). Let us consider two of the terms of \(L\) \(t_1\) and \(t_2\) where \(t_1\) is the term of \(L\) such that \(L = \{\#, \{t_1, K\}\}\) and \(t_2\) is the term of \(L\) such that \(K = \{\beta, \{\beta, t_2\}\}\). Here, \(r_1 = r_2 = a\). We obtain the pair \(<t_1, t_2> = <a, a>\) which is the chain \(CH = <a, \text{trace}(a)>\). A copy theory of movement therefore determines a chain unambiguously. In short, the copy relation is significant.

To sum up, the Jayaseelan proposal as amplified by Dasgupta concludes that \(\text{Spec}, F\) always is and \(\text{Spec}, \text{TOP}\) may be a copy of the
There is one formal problem with this mechanism. In fact, this is one of the main problems that has precluded the development of a precise account of TOPIC/FOCUS grammar in earlier work. The theory presented so far warrants not only both of the following:

(54) John, I like (TOPIC construction)
(55) I like PIZZA (FOCUS construction)

but also, overgenerously,

(56)*To JOHN, I give the PIZZA

both positions in (56) being effectively available for FOCUS. But as we see, such double focal pointing is in fact not allowed. A straightforward reason could be pragmatic. If the TOPIC/FOCUS strategy is believed to result in a presentation of unique information, then two-site focusing is pragmatically incoherent. To see it more clearly, consider (57):

(57) JOHN, I like

The problem seems to be a clash of the positional/functional

1. Notice that we are not discussing here the notion of contrastive stress/Focus.
properties. John is an old (topical) position but constitutes a new (focal) point of the message. For our purpose, we can describe the double strike property, wherever it may occur, as FOCUS and the position just-before VP as F(ocus).

1.3.3 AgrS/ AgrO Asymmetry

The basic asymmetry, as we have repeatedly pointed out, is preserved throughout. This is true of the subject/object asymmetry as well. It is this asymmetry which keeps the flow/transfer of syntactic energy from the subject to the object going. In the clause structure this is reflected to some extent in terms of the AgrS/AgrO asymmetry. We can call this AgrS/AgrO asymmetry an intermediate asymmetry which is visible in terms of Case marking activities that AgrS/AgrO partake in.

A lot of the empirical interest of the findings of the parametric tradition in the period of its classical successes lay in the discovery of the novel phenomenon of subject-object asymmetry. It was quickly shown that this asymmetry in general was best handled as a special case of a more general complement-noncomplement asymmetry. Such an inclusion implies that subjects count as elements that are arguments in the sense of receiving a theta-role from the verbal complex but are noncomplements in the sense that the verb does not, by Case marking or other means, morphologically license their appearing where they do at S-struk-
ture. In short, a subject is an external argument. We discuss the notion further in section 1.3.4.1 in detail. Most of the discussion here will also carry over to section 1.3.4 where we discuss an asymmetry deeper inside the clause.

Accounts that make too much of the NP-VP isomorphism push the burden of responsibility for these differences onto the shoulders of one of the following:

(i) a process of predication occurring only in clauses and effectively making the clausal subject obligatory

(ii) the specific nature of the functional head (call it AgrS) of the shell housing the subject of the clause, in contrast to a functional head of the D type

(iii) specific nature of the lexical head V which, by virtue of its transitivity borne directly by V or indirectly by some functional head (call it, following Muresugi's implementation outlined in Chapter 2, Tr for Transitivity) that mediates, ends up associated with effects like Precipitation, AgrS, or whatever makes the clausal subject tick.

These ways of spelling out the agenda correspond to issues of transitivity and agreement. We take predication to be a part of agreement in as much as it underwrites the AgrS-AgrO (subject-object) asymmetry, to which we now turn.

1.3.3.1 Predication

The externality of the subject is a requirement for predication to take place. This is achieved by closing syntactic predi-
cates off by linking to an appropriate syntactic argument. This appropriate argument for Rothstein (1985) is the **formal subject**. The rule of predicate linking is a condition on the well-formedness of syntactic strings and, therefore, is a formal requirement of the externality hypothesis. Both the clausal (58a) and the nonclausal (58b) predicates in the following are linked to subjects.

(58)a. Mary saw John
(58)b. Mary ate the carrot *raw*  

(Rothstein 1985)

A sentence is, therefore, a clausal predication relation. A particular XP becomes a predicate only if it can be closed off by an external argument. So the subject of an XP must be external to that XP. An external argument is an argument not c-commanded by the head of the XP. APs, VPs, and PPs must always be predicated of an argument, whereas an NP may be predicated of an argument, but it must be closed internally. NPs, therefore, can act as both arguments as well as predicates in this system.

As in Frege, Rothstein's predication is also a function, but different since it is devoid of any semantic import. According to Frege, a grammatical predication is a function expression denoting a function and it has certain properties common to all such expressions. In Fregean terms, a function is open or unsat-
which requires the empty place to be filled by an argument to be saturated. For example, in $2x^3$ the variable marks the place where the name of a number will be inserted to complete the expression. In (58a) above the VP predicate saw Mary requires an argument John to complete it. This is the case for syntactic predicates which are always monadic functions. Frege's grammatical predicates can be polyadic. In generative syntax, the counterpart to this type of predicate is the lexical head. Consequently, the theta-role information for such heads is deciphered from their lexical entries such as the following:

$\text{(59)}$ $\text{put}_\text{Pred}$: agent patient location

The structure of a syntactic predicate is determined by the formal rules of syntax. The following are examples of different lexical categories as predicates:

$\text{(60)}$

a. John [gave Mary the $\text{book}$_{VP}

b. Bill beats carrots [raw]$_{AP}$$_{VP}$

c. He [drinks tea [with sugar]$_{pp}$]$_{yp}$

d. She [thinks him [a fool]$_{NP}$]$_{yp}$

(Rothstein 1985)

In (b-d) each of the embedded categories is itself predicated of an NP also within the VP. In (b,c) although the embedded XPs must have a structural subject they do not form a constituent unlike (a,d). The latter are called for this reason secondary predicates
(or small clauses) and the relation between their subjects, according to Rothstein, secondary predication.

As far as the building of a syntactic tree is concerned, however, the Fregean notion of Predication has been standardly assumed to be the operative one. In our discussion of the interaction of subjectology and topicology below, we will assume that the Fregean notion of Predication to be relevant in constructing predicational pairs of staging/event and event/focus. For Chomsky (1977) a preposed X" phrase is base-generated in TOPIC position and linked to S' by a rule of predication. As we develop our concerns we will say that the TOPIC position is one of the sites for "Staging" to take place. Staging, therefore, will be assumed to involve an implicit predicational relation.

1.3.4 VP Asymmetry

The subject/object asymmetry manifested at the AgrS/AgrO dyad is associated with a further asymmetry within the VP. This is the innermost asymmetry. Both the AgrS/AgrO asymmetry and the intra-VP asymmetry act out the transitivity of a clause. We conjecture here that the SIH (Split-INFL Hypothesis) is an encoding of the subject/object asymmetry which gives rise to the AgrS/AgrO dyad. Similarly the Split-VP-Hypothesis of Koizumi (1993) that we report and use for our analysis in Chapter III is, we claim, a result of the recognition of the asymmetry within the
As we stated in the previous section the subject/object asymmetry as manifested in terms of the AgrS/AgrO asymmetry shows itself as patterns of Case marking. In the case of the intra-VP asymmetry, it is captured through a split in theta-roles. This is the externality of subject hypothesis; that we will shortly look at. We may note here that the AgrS/AgrO asymmetry and the one inside VP overlap to a large extent. An intra-VP asymmetry appears in all versions of the VP-internal subject hypothesis, where a VP must find niches for all the arguments of the verb. This we saw to some extent in discussing the Larsonian recursive shell in section 1.3. The AgrS/AgrO asymmetry is therefore a result of the way movements out of the inner VP that occur for case reasons preserve the intra-VP asymmetry. With the advent of a checking theory of Case, the status of the intermediate asymmetry (AgrS/AgrO) has become important. What we are trying to say here is that most of the discussion found in section 1.3.3 is also valid for the present discussion.

1.3.4.1 Subject as an External Argument

The notion of "external" argument deserves attention. The Extended Projection Principle of Chomsky (1981) requires an NP in the [SPEC, IP] position. But the proponents of the VP-internal
subject hypothesis like Kuroda (1986), Kitagawa (1986) and others shift the crucial position (where an NP is required for EPP) to [SPEC,VP]. Borer (1986) (further discussion can be found in Chapter III), on the other hand, proposes that there is no one subject position. According to her, an IP must contain an NP coindexed with INFL called the "I-subject". The distinction that these two hypotheses emphasize does not obtain in a sentence like the following:

(61) Rohan saw Runu

In (61) the structural subject and the "I-subject" are identical. This identity is extended to cases of expletive subjects which are assumed to be in the Spec-IP position receiving Nominative from the INFL and forming a chain with an NP (the postverbal NP) to which it ends up transmitting the Case. Such a reading treats (61) and (62) alike in terms of both EPP and the I-subject hypothesis.

(62) There is a rabbit in the box

However, the externality of the subject is not just a matter of occurring outside the VP in sensu stricto at S-structure if minimalism turns S-structure into an intermediate station without significance, and if even objects must move to [SPEC,AGRo] to get licensed at LF for what are taken to be Case-theoretic reasons. The standard picture says that, in the VP-internal subject hy-
thesis, the object is generated inside, as the closest sister of the V, while the subject is in the outer layer, serving in some theories as a Spec of VP. This picture has the virtue of handling well the ways in which the VP is like the NP, which too displays subject-object asymmetry. It has the drawback of baking the clause look too much like the nominal.

As shown in LGB, there are some important empirical differences between the optional subject of a nominal and the mysteriously obligatory subject of a clause. In deciding between the following two possibilities for an S-rule, Chomsky (1981) shows that it is \((63\text{ii})\) that needs to be specified as the correct S-expansion rule for English.

\[(63)\text{i. } S \rightarrow NP \text{Tense VP} \]
\[(NP) \text{ to VP} \]
\[(63)\text{ii. } S \rightarrow NP \text{ INFL VP} \]

The obligatoriness of the subject position in a clause in English is evidenced by sentences of the following type:

\((64) \text{ there is a good reason for his refusal} \)

The expletive there in \((64)\) cannot be missing. Chomsky (1981) points out that the theory of government prohibits the occurrence of a PRO in this position. For some reason these sentences require a phonologically overt structural subject. This require-
ment does not derive from theta theory since there in 64 does not bear any theta-role. The verb B in such constructions also cannot be said to subcategorize for subjects. The obligatory presence of the subject seems to be a purely structural necessity that certain configurations — infinitives and gerunds — must have a subject. This requirement, Chomsky points out, falls out naturally if we assume the S rule in (63ii) above.

In the case of subjects bearing a theta-role, the Projection Principle derives the requirement but it leaves it open as to whether non-theta positions also must be represented at each level. The obligationiness of the subject is determined in English by the Projection Principle given that a particular subject position is a theta-position but some other principles determine whether or not any given subject does indeed occupy a theta-position. Therefore, the fact that clauses with certain VPs (like persuade John to leave) must contain a subject at LF is a theta-theoretical requirement.

The picture however changes for non-clausal NPs like the following:

(65)a. My belief that there will be a good reason for his refusal

b. The belief that there will be a good reason for his refusal

(Chomsky 1981)
Chor'ky points out a fundamental difference between N' and VP. The former does not obligatorily theta-mark even when its head is lexically specified as one capable of indirectly theta-marking a subject, whereas the VP does obligatorily theta-mark if its head has this property. Therefore, it is not entirely correct to say that the Projection Principle entails the presence of subjects where the head of the construction indirectly theta-marks a subject. Obligatory positions in this system are those determined either by the subcategorization frames of lexical items or by rule (63ii) above. If the VP has appropriate properties in these cases then the subject will be obligatorily theta-marked.

In case of NPs the subject may or may not be present. If the N has the property of indirectly theta-marking the subject then if an argument is present in the subject position at D-structure, then that argument is theta-marked at every syntactic level. If no subject argument appears, then no theta-marking takes place. This convention, according to Chomsky (1981), gives the required distinction, while permitting NP movement to S-structure subject position of an NP, not a theta-position, without violation of the theta-criterion. Whereas if we adopt a structural rule where the subject NP is optional, the required distinction is lost.
The importance of studying the intra-VP asymmetry is that internal V correlates with external T just as the intra-VP asymmetry matches the AgrS/Agr0 dyad. It is in this context that the fundamental categorical difference between verbs and nouns/adjec-
tives becomes apparent. The latter categories nourish only one Agr whereas verb is unique in always supporting two Agrs. This defines the verb and assumes that only a verb can directly con-
struct a scene.

1.4 Time and Staging, Scening, Event

In this section we hope to provide an overall picture of the notion of clause that we have in mind. This notion obtains as a result of the interaction between the asymmetric dyads which provide the bones and the concepts of Staging, Scening and event which lend thematic flesh to the clause. The asymmetries serve to provide, as we mentioned earlier, fluorescent highlights for staging etc. to take place.

This fleshing out of a clause in a process that runs parallel to the temporal drama that unfolds as we move deeper into the clause from Tense to Aspect to Aktionsart. This sequence then stretches from a deictic notion (Tns) to a specific property of the lexical item (Akt). That is, if the Tense is deictic then aspect can associate a specific picture with a (lexically) given
Aktionsart.

1.4.1 Tense, Aspect, Aktionsart

Conventionally temporality is exhibited in three different ways (Klein 1994).

(i) the time of some event, action, process etc. which is related to some other time interval (Temporal reference or Tense)

(ii) the temporal course of an event, action, process etc. which is viewed/presented in different ways (Aspect)

(iii) verbs classified according to their inherent temporal features (Aktionsart)

Tense relates to some time span, especially to the time of utterance. Some event, for example, temporally precedes the time of utterance (past) or it follows the time of utterance (future), or it overlaps the time of utterance (present). Tns as well as adverbials may be used to express temporal reference. Tns is always deictic.

Aspect deals with different perspectives which a speaker can take with regard to the temporal course of some event, action, process etc. That is, the speaker may consider it as completed, on-going etc. This view is independent of the time on the time axis. Originally aspect was tied to a morphological difference
between perfective and imperfective forms in Slavonic languages (Klein 1994). The later, more generalized content of aspectual notions has lent itself to many uses. For our purposes, we note one point from aspect theory — the point that an action starts at the subject and ends at the object. This is where aspect theory intersects with the thematic or pretheoretical concepts that we begin to sharpen in this section.

To start with we note that there are various factors that interweave at aspect. We may consider a two point scale covering certain properties of aspect: compact and diffuse. Compact aspect will handle telic objects, especially a definite object, whereas diffuse aspect obtains when there is no object present or only an irresolute one. In the latter case the transitivity becomes low (detailed discussion can be found in Chapter II on the theme of calculating transitivity).

Compact and diffuse aspect so distinguished, we note, interacts with our construct of Scening. One may speculate that the proper embedding of compact versus diffuse aspect within a scene is a matter of economy. The relevant notion of economy may be expected to develop as the study of degrees of resolution of scene components progresses beyond its present programmatic phase.
Also note that a strong aspect supports an unmarked or typical overt object — as in the case of compact aspect — and provides the usual cornerstones for our prototypical transitive clause nucleus. The strength of aspect is determined by presumably many dimensions of aspect resolution one of which is the telic/nontelic distinction. Aspect strength is also a pragmatic/discourse criterion for calculating the transitivity of a clause along the Hopper and Thompson (1980) scale of pragmatic parameters. This is discussed in detail in Chapter II.

The temporal properties of the lexical contents of verbs differ in terms of durativity, inchoativity, iterativity and stativity etc. (Klein 1994). Verbs can, therefore, be grouped into classes whose members denote events, actions, processes, states etc. The membership of a verb in such classes is commonly called its Aktionsart.

1.4.2 Staging

From the discussion so far, it is clear that temporality cannot be ignored and therefore we need an anchorage in time. We take it that Tense carries out such anchoring. As we stated earlier, Tense is deictic at the clausal level. To say that what the clause presents "has taken place before" is to indicate or refer to a previous time. Tense, we therefore claim, does the
job of referring to time.

We further claim that tense is present at two places in the clause: COMP and T(ense), the heads of the maximal projections CP and TP respectively. This gives us the following:

\[
\begin{array}{c}
\text{COMP} \\
\text{TP}
\end{array}
\]

The T in COMP is illocutionary (and therefore T↑↓) and the T in the head of TP is structural (so T↓↓). T in COMP handles what we propose to call staging. The highest COMP of a sentence provides "absolute" deictic properties for the sentence as an illocution proper. Staging is a way of putting the clause in some picture — that is, to sponsor it vis-a-vis some audience for which it can perform, and this is done by setting up the deixis of the sentence through the T in COMP. Every non-root COMP provides "relative" deixis at its T, reaching the external world via all the upstairs Comps, which are so many pictures the clause must perform within. At the root T-in-Comp, "all the world's a stage". Our notion of "staging" is thus neutral between root and non-root Comps. We are also using illocution" in a way that treats an embedded COMP as a relativized illocution site.
The illocutionary T in Comp which stages the clause, then, also communicates with the structural T located at the head of TP in order to construct properly the illocutionary stage for the clause. Staging proper is a matter of root illocution but it remains active throughout the body of the clause. Further down, at the location of the AgrS/AgrO asymmetric zone, transitivity shows up, we claim, as an effect of a weaker counterpart of staging that is active in the AgrS/T/AgrO area. This view supports our earlier contention that the asymmetries define the route through which staging etc. can initiate and travel down the clause. These illuminated islands manifesting a transmission of asymmetry provide a route down which the shadows of staging can be pursued. One function of the asymmetries, we mentioned earlier, is to facilitate staging. Transmitted asymmetry serves also as the observation arena where the increase/decrease in salience is determined which interacts with staging to yield the forces of deixis (and transitivity) active in the clause.

If topicalization is a movement to Spec,CP and if staging is at C, then topics cannot be independent of the act of staging. This is exactly what is borne out as one of the typical functions of a topicalized element. We claim that illocutionary T in Comp which drives the staging, controls the degree of resolution of the topic in Spec,CP. Pretheoretically, only a strong T in C
seems to support a topic at all. We shall take the position that a strong (finite indicative) \text{T} in C alone has the option of supporting an overt topic; otherwise we get Huang's covert topic or the ubiquitous trivial null topic. The topic-comment asymmetry is the \textit{fundamental} stage prop; it reflects the work of staging as a matter of bringing the new (Comment) to bear on the given (previous text or context) via the mediation at the topic site. And a strong C can afford the occasional luxury of a high-resolution version of this asymmetry by opting for an overt, distinct \textit{topic}.

1.4.3 Scening

Scening, we claim, is an entity different from staging both in terms of its function as well as location. We propose that NP slots are organized as roles in scenes nucleated at verbs. Scening, therefore, continuing the work of staging, reaches down the illuminated highway of asymmetries to the verb where weakly and strongly resolved NPs are situated. Notice that this is another motivation for studying \textit{transitivity}. If transitivity is 1. This is what we suggested earlier by saying that only verbs can construct a scene.

2. This also bears upon the Lexology project of Dasgupta (forthcoming), in the sense that this establishes the quintessential lexologic \textit{tenet}: sentences are new, words are old. Verbs, note, are the crucial device in the business of building new sentences from old words.
defined in terms of staging, **scening** and event then a study of
the phenomenon would lead to a better understanding of these
fundamental concepts which seem to be the crucial forces behind a
clause. Scenes, as we said, are constructed with NP roles and
exhibit a particular distribution of high/low resolution. This
is achieved by a hierarchy within the typology of possible scen-
ings. Therefore, we claim that scening can be strong or weak.
Strong scening results in an independent scene. Weak scening,
we claim, results in dependent scenes. Through the latter one
fills out the picture. It is as if that part of the clause (or
discourse) where dependent scenes are born, is saying "embed me
in another sentence (or scene)". Strong scening, however, is
**pragmatically** responsible. In other words, it can stand all by
itself as a separate speech act. A strong scening accepts full
**responsibility** for answering queries on how the given/new deal
is negotiated or implemented.

In order to now decide on the syntactic location of scening,
we invoke the clause structure proposed by Polllock (1993). He
claims, gathering evidence from historical facts, that the loss
of overt main verb raising to the pre-Neg functional position in
English is a consequence of the loss of **morphologically** manifest-
ed mood distinctions between the indicative and the subjunctive.
Based on such historical facts he suggests a projection MoodP
above the TP projection for English and French as follows:

(67)

\[
\begin{array}{c}
\text{MOODP} \\
/ \ \\
/ \ \\
\text{MOOD} \\
/ \\
(\text{Neg}) \text{TP} \\
/ \\
/ \\
T \text{ AgrP} \\
/ \\
/ \\
\text{Agr VP}
\end{array}
\]

In the synchronic grammar of English we find evidence for this proposal from Laka (1990). We note with him, that Mood distinctions are also expressed in English through modal auxiliaries like *will*, *way*, *can*, etc. Keeping this in mind we represent Pollock's MoodP as ModP -- a move made in Roy (1995) for an analysis of Bangla negation. Laka points out the following paradigm for a variety of Southern American English:

(68) Can you do that
'You can do that'

According to Laka, NPIs in this variety can be licensed at the subject position -- a possibility not realized in standard English -- only if negation cliticizes on the modal:

(69) Can't anybody do that
'Nobody can do that'
For his purpose, Laka assumes a position higher than the Comp for modals. This variety of English, therefore is another evidence for a topmost projection of ModP in English.

The clause structure proposed by Pollock (1993) implies that the modal system is somewhere outside the prototypical clause structure, that is, outside the IP structure. This is borne out by the fact that when a language chooses to reduce its tense distinctions the system shrinks into the non-future subsystem, that is, the future is separate from the other tenses and moods in the tense system of a language. Let us say, the future does not fully participate in the tense system. Now consider the fact that imperative and subjunctive mood constructions resist topicalization. The situation is somewhat as follows:

\[
\begin{array}{ll}
\text{Mood} & \text{Overt Topic Possible} \\
\text{Indicative} & \text{YES} \\
\text{Subjunctive} & \text{NO} \\
\text{Imperative} & \\
\text{Infinitive} & \text{OF COURSE NOT} \\
\end{array}
\]

Also notice the fact that even in richly inflected languages imperatives (like the pragmatically parallel vocatives) resist inflection as well. We conjecture that imperative's very weak inflection or subjunctive's weak inflection needs to establish Mood-to-staging contact to get its bearings straight — a contact
that can not take place across a topic. This results in the
above categorization (70). Infinitives are then just an extreme
case of dependent scenehood.

We suggest from this that it is at M(oed/ode) where the
actual decision regarding the strength/weakness of sceneing takes
place. The topic/focus possibilities open up whenever the M
itself is strong. In the case of both subjunctive/imperative
and infinitives, any weakness in M results in the lack of Topic,
thus the hierarchy in (70). This strong/weak distinction of M
reflected in strong/weak sceneing since the former decides the
situation possibilities.

In short, what we have suggested so far, reduces to the
following:

(71) Staging decides the scene to scene constructions/
connections through an illuminated highway of
asymmetries and sceneing decides the modalities of
each individual scene already structured at COMP
through staging.

### Event

Event is the last of the tools to drive down such a highway
as the one depicted in (71) in order to understand the clause/
discourse-structure better through an inspection of transitivity. It is thanks to the parametric revolution of Pollock (199) and others leading to the Split-INFL hypothesis and then to minimalism, that we can make better sense of the INFL system both empirically (Pollock/ Chomsky/ Mahajan) and conceptually (Higginbotham on InfI/ Davidson on event linkage). Owing to earlier formal semantic work, we can deal with the event system, that is, with clauses more efficiently/ fruitfully than we can with the scenerings associated at the Mood level.

Davidson (1967) suggests that in all action sentences — at least all the indicative ones -- there is a quantification over events. Consider (72) below:

(72) John kicked Sam

Kick in (72) is not a two-place predicate but a three place relation between John, Sam and an event. The semantic representation of (72) above is (73).

(73) [\exists x : x is an event] kicked (John, Sam, x)

In Higginbotham (1985) the thematic grid of a verb like see is shown as:

(74) see, +V -N, <1,2,E>

In (74) the position E corresponds to the "hidden" argument place for events. Higginbotham extends this essential Davidsonian
concept vocatives as well and pragmatically. E in Kigginbotham, corresponds to a bundle of objects called "situations". He locates E at Infl.

The proposal of relating verbs to events and states is not new in philosophy. It is found in Port-Royal Logic. It receded somewhat in the background after Frege and Russell who considered it secondary. In Parsons (1990), verbs are taken to be more like common nouns (kinds) than proper nouns. The theory he proposes combines Panini and Davidson. The basic assumption is that sentences like (75) say something like (76).

(75) Caesar died.

(76) For some event e
     e is a dying, and
     the object of e is Caesar, and
     e culminates before now
     (Parsons 1990:6)

In symbolic logic this is translated as the following:

(77) (3e) [Dying(e) & Object(e, Caesar) & culminate (e, before now)]
      DEFAULT VERB VERB TENSE

A traditional logic-book analysis of the above sentence would give a formula as: D(c) where D represents died and c represents Caesar. A more refined formula is:
This proposal is not very different from (77) except that the latter fills in some details.

Tenses representing time in Parsons (1990) are shown with operators like PAST, PRESENT or FUTURE as in the following:

\[ (\exists e) \cdot \text{Dying}(e) \text{ and object } (e, x) \]

This move of Parsons' (1990) combined with a present day translation of Higginbotham (1985) suggests that the event can be thought of as being located at \( T \). At the level of interpretation, however this conflation is restricted. Thus, in the logical representation, event and tense are separately quantified. Notice that in Parsons, the event predicates all have -ing forms. This suggests that event, like staging and scening, is a process, different only in that it is probably more descriptive or nominal.

One final move that we may contribute is that if we believe Guasti's (1993) analysis of Romance Infinitives, then we may conclude (with Guasti) that event complements contain an Agr
projection. Although the notion of Event in Guasti differs from ours, we accept this conclusion and make the following moves. The presence of Agr in T (=Event), unlike Guasti, we say is a result of a linking established with an Agr projection. Now the M head, we conjecture, is in some way responsible for the Morphological appearance of the subject. If that is the case then we suggest that the M head has some way of linking on to the AgrS head as they, then jointly decide the subject properties. If we make this move then we are left with a possible link between the T head (where the Event resides) and the AgrO head. However, we can not, at this stage think of a concrete implementation of realizing the linking of M with AgrS and T with AgrO.

1.5 The Lenin Question

Pretheoretically, topicology is going to involve grammar and pragmatics, while subjectology seems to lend itself more consistently to grammatical treatment. Our approach is going to be computational. This is not to promise immediate (and thus shallow and unusable) results'. Rather the role of the computational framework is to impose some order on our mix of grammar and pragmatics via the shape of an external requirement that needs to

1. The title of this subsection derives from the fact that Lenin had inherited from Chernyshevsky the crucial question "What is to be done?"
be fulfilled. For the study of the clause in linguistics must, if it is to be worth anything, eventually converge with the study in psycholinguistics, in computational linguistics, and in philosophy, of the typical, sentential representation of an action or an event. Our purpose, then, is to pursue the linguistics of the clause, bearing in mind the need to make the account serve the broader purposes of a computational account -- relativizing linguistic theorizing to its non-linguistic use.

Transitivity, as we stated earlier, turns out to be a special case of topic-comment (subject-object and other trajector/landmark dyads) but studying it as a special case of the general dyad is beyond practical politics at present. The reason for this is that the nitty-gritty, of each study involves looking at specific grammatical landscapes. The landscape needed for the study of transitivity is inspectable but one needed for topic-comment is understudied and can emerge, if at all, only after the present type of exercise on transitivity reaches a certain stage.

We propose to cross-breed this core work with thematic material on transitivity in Hopper-Thompson, Givón, Langacker and other functionalists whose thinking complements the structuralist achievements in the parametric tradition. Specifically, we cross-breed the grid given in the structuralists with the point mass specification provided by the functionalists who are worried
about degrees of definiteness/resolution/strength at what turns out to be each functional head (it is appropriate that it is the functionalists who turn out to be informative about what the structuralists call functional heads), at each Aspect, T, D, and we shall add in chapter IV, B.

This gets us to the point where we can at least figure out the prototypical simplex clauses with some confidence and map out an agenda for things to do on this basis. We have already outlined the main stories in this chapter, which have to do with the trajectors/landmarks, the ups and downs of givenness and newness interacting with constructs like Staging, Scening and Event to play out the real world manifestations of a typical sentence.

The subplots are explicated in the following chapter. We first choose to explore the event. Hence the transitivity chapter. This lands us in a study of devices used in a language to show what is going on. Hence the agreement chapter. That takes us closer to the inner stories of D and B strength in NPs. Here we make new contributions based on the (to most readers) brand new mysteries of the Bangla classifier system, that is, the DP chapter where we hammer home the point about how functional head strength correlates with high resolution (here, nominal definiteness) and close the narrative of the thesis.
Such a study, we claim, is good for computational linguistics (even for NLP) and theoretical cognitive science where linguistics meets, Jackendoff style, the visual system and other forms of processing-organizing.

1.6 Organization of the Thesis

In this chapter, so far, we have elaborated the interconnections that obtain between various asymmetries and the given/new distinction. We further proposed the syntactic impact that such interconnections may have on concepts like staging, scene and event which together define the consequences of a clause in the totality of a discourse. In this section, we outline the organization of the discussion presented in the rest of the dissertation.

In Chapter II we discuss the notion of transitivity to further demonstrate the connections between film-theoretic concepts and syntax proper by proposing to capture the transitivity of a clause through an evaluation of salience of the clause in terms of a modified version of the Discourse Representation Theory. This modification, in terms of a "Camera Angle View" and the notion of a field, we claim, will lead to a more efficient correspondence between the two major versions of DRT, that is, of Kamp (1981) and Heim (1982). The crucial concept of accommoda-
tion is discussed in detail in this regard.

We present an algorithm in section 2.4 based on the Novelty Condition of Heim (section 2.2) and a modified DRT. This algorithm is shown to fall short in certain crucial respects and is, therefore, modified later in section 2.9.2. In this revised algorithm we attempt to integrate the two separate notions of transitivity — semantic/pragmatic transitivity and syntactic transitivity -- that we identify earlier (section 2.7), in terms of a mixed mode method of parsing. Thus, we show that, Hopper and Thompson's (1980) pragmatic parameters of transitivity and Murasugi's (1992) notion of syntactic transitivity can be effectively put to use to serve a common goal, that of computational efficiency.

In Chapter III we discuss the notion of agreement as much as it bears upon our agenda. Agreement for our purpose serves the goal of identifying the participants for evaluating syntactic transitivity and therefore, ultimately, salience — the major thrust of this project. We have earlier seen in this chapter that in our attempt to find an equivalence between the VP and the NP structure we need to take care of the network of agreement relations — in addition to other networks — of a clause to achieve the goal of equivalence. In short, agreement, therefore,
provides finer details in a particular subroutine of an algorithm that we presented in the previous chapter.

The bulk of the chapter is devoted to the thesis that the object relation is more important; we try to see this in the light of a more general term like landmark. The primacy of the object was earlier (Chapter II section 2.7.4) shown to be prominent in child language and is also apparent when we try to expand our picture so that it includes unergatives and unaccusatives as well as dyadic verbs. In this chapter, unergative clauses are first shown (section 3.2) to consistently contain a deep object position. The following sections discuss ergatives, transitives unaccusatives to argue that all of them have an object at some level of derivation. This discussion also includes revisions of the Split-VP Hypothesis and the Obligatory Case Parameter.

In section 3.5 we present our analysis of the phenomenon of long-distance agreement in Hindi, based on Watanabe's (1993) Three-Layered Case Theory and claim that the analysis has an advantage over existing analyses in terms of the data that it covers as also the computational edge that it packages. In our terms an (actually) L-related position can be detected if we are able to track the different features like Fs (see section 3.5 and 3.6 for details) located/created during the derivation. This would then make our task of producing a list of the typology of
positions (in terms of the \( A/A' \) distinction, for example) easier. This, we claim, is the computational advantage of our theoretical account.

In Chapter IV the phenomenon of (Noun) Classification in Bangla (and Hindi, to some extent) is discussed in conjunction with our drive towards discovering newer asymmetries down the clause highway. The inner stories of strength resolution of B(adge) and D(eclension) are revealed in order to flesh out the relevant phrase picture as much as it contributes to the clause picture. Definiteness, in this connection, seems to correlate strongly with the new/given distinction (section 4.1). Thus, the classifier as a cognitive category and its definiteness import is presented in section 4.3.

Based on certain distinctions between Hindi and Bangla, we make a major claim regarding the typology of languages and propose that languages be classified as Gender languages and Class languages, Hindi and Bangla exhibiting the characteristics of each respectively. This distinction leads us to suggest certain differences between Hindi and Bangla DPs on the basis of the relative strengths of the B and the D head in each language.
In section 4.10 we discuss Principle-Based Parsing (PBP) in connection with the Bangla classifier system and show that a PBP approach along with a strong KB will give us the right results as far as the DPs in Bangla/Hindi are concerned. We propose (section 4.10.2.1) that Frames are phrase level computational variants of the thematic concept of *scening* which we claimed (section 1.4.3) determines the modality aspects of a clause and thus the parsing technique that we suggest enables a computation of scenes. Lastly (4.10.3), we propose a KB called WISE which solves certain residual problems of Bangla nominal syntax.