A THEORY OF LEXICAL FUNCTORS:
LIGHT HEADS IN THE LEXICON AND THE SYNTAX

by

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ABSTRACT

This thesis advances a specific model of l-syntax, based on Hale and Keyser (1993, 1994) and Déchaine (1996) as a point of departure, and also proposes a general theory of the relation between the lexicon and the syntax. One of the essential proposals that I make is the Functionalization Principle, which permits a lexical head to project a functional projection if and only if the meaning of the head is represented by l-syntactic structure without any extra semantic features. I refer to this type of head as a light head. The Functionalization Principle leads us to a principled account of various lexical and functional uses of lexical items such as a passive morpheme -en and have.

Examples that support my analysis range from adjectival and verbal passives (e.g. Mary is very pleased and The glass was broken by Bill), to constructions of alienable and inalienable possession (e.g. John has five bucks and John has blue eyes), to causative/experiential constructions (e.g. John had his students walk out of class), and to perfect constructions (e.g. Lucie has advised the prime minister). Furthermore, the analysis of possessive have is extended to possessive nominals (e.g. John’s cat and John’s eyes).

I also examine the implications of the theories of l-syntax and l-functors for Case. I propose that l-syntactic structure partly determines inherent Case whereas the l-functor checks what I call l-functor Case through the Spec-head relation. Furthermore, I show that these analyses
of inherent Case and l-functors account for essential properties of possessive D (a genitive marker -'s), some Hindi marked subject constructions and Japanese experiential transitive constructions.
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1.1 Light Heads

In language after language, we find a restricted range of verbs that can be used either lexically or as a grammatical morpheme. These kinds of verbs have often been called *light verbs* because of their 'light' lexical meaning. For example, the English verb *have* can be a lexical verb of possession, as in (1a), or an auxiliary in perfect constructions, as in (1b):

(1) a. Mary has a hat on her.
    b. Lucie has advised the prime minister.

The 'semantic lightness' of *have* can be illustrated by the following various constructions in which *have* can appear:

(2) a. John has blue eyes.  
    b. John has a cat.

(3) a. Sheila had a good time.  
    b. Harold had a dinner party.  
    c. The cabinet has a stereo in it.

(Ritter and Rosen (1993: 533))

(4) a. John has the measles.
    b. John has a good chance of winning.

(5) a. John has a painting he wants to bid on at the auction.  
    (John wants the painting.)
b. John has a painting in the new exhibit at the Gallery.
   (John created the painting.)

c. John has a painting in his bathroom.
   (John owns the painting.)

(6) a. John had the cake decorated.

b. John had Bill decorate the cake.  (Causer)

c. John had three people drop in unexpectedly yesterday.  (Experiencer)

((4-6): Cowper (1989: 88))

The variety of usage associated with *have* illustrated by these examples strongly suggests that *have* is not specified particularly for possessive, causative, experiential, or perfect meaning. Instead, the lexical representation of the meaning of *have* seems to be underspecified.¹

A general question, however, remains to be asked and answered:

(7) What are the defining properties of light verbs?

It is vacuous to answer that a light verb is semantically light. We need a theoretically meaningful definition of 'semantic lightness'.

It is in fact necessary to ask whether it is appropriate to limit ourselves to verbs when we think about semantic lightness. I argue that the answer is no. Consider a passive morpheme *-en*. Lexical *-en* is just one of the adjective-forming suffixes (see Wasow (1977) and Bresnan (1982), Levin and Rappaport (1986), and Borer and Wexler (1987)). In

¹ An alternative is to assume that there are several unrelated lexical entries which happen to be assigned the same phonological content *have*. I do not consider this alternative because it is unilluminating.
this respect, lexical -en is just like -able and -ish:

(8)  
  a. Lucie is surpris-ed.
  b. This book is read-able.
  c. That remark is devil-ish.

However, there is some semantic contrast between -en and the other suffixes. The latter suffixes have some distinguishable semantic features. V-able means something like 'one is able to/can V', which may be represented as ABLE. N-ish means something like 'like N', which may be represented as ISH. By contrast, there is no parallel semantic feature in the meaning of V-en. -En only stativizes the meaning of a verb. This is an instance of semantic lightness. Obviously, however, -en cannot be subsumed under the rubric of light verbs: it is not a verb.

Being semantically light, -en appears in another syntactic environment, i.e. syntactic passives, in which -en functions more like a grammatical morpheme, restricted by a way different from adjectival -en. For example, syntactic passives imply an agent/causer, which adjectival passives do not:

(9) The glass was broken by John.

There is an intuitive sense that both the adjectival and the passive morphemes (-en) are related in the way that is reminiscent of the relation among the uses of have indicated in (1-6): light verbs and passive morphemes are both semantically light and can be used as grammatical morphemes. It is plausible, therefore, to suspect that semantic lightness is relevant to the extension of lexical -en to syntactic -en and the extended uses of a light verb have. If this insight is on the right track,
light verbs and -en constitute a natural class. In this thesis, I advance a
generalization which groups together a light verb like have and -en,
which I call light heads.

1.2 An Approach to Light Heads: Pure Structurality

This thesis attempts to answer the question in (7), which is
rephrased as in (10), given the notion of light heads:

(10) What are the defining properties of light heads?

I present a theory which captures various uses of light heads: in
particular in adjectival and verbal passives; causative/experiential
constructions, and perfect constructions. These are illustrated in the
following:

(11) a. Lucie is surprised.
b. The glass was broken by John.

(12) a. John had Bill decorate the cake.
b. John had his students walk out of class (on him).

(13) a. John had the cake decorated.
b. Lucie has advised the prime minister.

The answer to (10) that I will propose in this thesis can be summarized
as follows. Suffixes like -able and -ish are specified for stativity and
additional inherent meaning: ABLE and ISH, respectively. Lexical -en,
however, is specified only for stativity but not for any specific inherent
meaning that parallels ABLE and ISH. This contrast suggests that the
defining property of light heads is that they are not specified for such
semantic features as ABLE and ISH. Precisely in this sense, -en is semantically lighter than -able or -ish.

Elaborating on the above idea, I argue that the essential properties of light heads can be naturally formulated under a version of the lexical syntactic framework advanced by Hale and Keyser (1993, 1994) and modified by Déchaîne (1996). These authors propose that there are two levels of syntax: lexical syntax or l-syntax and sentential syntax or s-syntax. L-syntax represents lexical semantic information in terms of syntactic structure. In particular, whether a head denotes an event or a state is represented by a certain l-syntactic configuration in the theory that I adopt. I propose to identify a light head -en as an l-syntactic head that projects a stative l-syntactic configuration but is specified for no other semantic features. I further propose a theory which permits light heads to be functional heads. I refer to these lexical and functional items as lexical functors, or l-functors, following an insight of Ritter and Rosen (1993).

Extending this line of approach, I propose that have in (12, 13) is an l-functor and furthermore that on, which induces an experiential reading in (12b), is also an l-functor.

1.3 Cases Determined by Lexical Heads and L-functors

In Chapter 4, the thesis argues that l-syntax has significant and interesting implications for the theory of inherent Case. It is widely believed that inherent Case is correlated with θ-roles. As Hale and Keyser
(1993) argue, θ-roles are derivable from l-syntactic configurations. Then, it is natural to hypothesize that inherent Case can also be derived (in part) from l-syntactic configurations. Based on this leading idea, I will propose an l-syntax-oriented theory of inherent Case. I will pay special attention to Hindi. Consider the following construction in which the subject argument is dative-marked:

(14) tuSaar-ko kitaab mil-il.

Tushar-DAT book-NOM receive-PERF

'Tushar received a book.' (Mohanan (1994: 141))

Dative Case on the subject in (14) is determined by a set of verbs that denote what I call endpoint coincidence. I will show that dative Case determination follows from the analysis of inherent Case that I will propose.

I also propose that an l-functor can determine Case. I examine possessive nominals such as John’s cat and demonstrate that possessive D is an empty l-functor, accounting for genitive Case determination and the semantic property of this Case.

I further examine a Hindi perfect construction such as (15):

(15) raam ne kitab paRh-il hai.

Ram ERG book read-PERF.F.SG is

‘Ram has read the book.’ (Hackman (1976))

I will show that in the Hindi perfect construction, an l-functor is

\[2\] The same possibility is independently suggested by Hale and Keyser (1997: 60). They suggest that a preposition can determine inherent Case. The present thesis presents a more general and principled theory of inherent Case.
projected even when it has no overt realization. This analysis derives the ergative-subject property of the Hindi perfect construction. The analysis, thus, makes it possible to give a unified account of perfect constructions with or without HAVE.

Finally, I examine experiential transitive constructions in Japanese, illustrated in (16):³

(16) Watashi-tachi-ga kuushuu-de kazai-doogu-o
    I-PL-NOM air raid-by household-belongings-ACC
    minna yak-te-sima-ta
    all burn(TR)-TE-REGRET-PAST

    'We had all the household belongings burnt by the air raid.'

(Amano (1995: 152))

A verb such as yak 'burn' is prototypically causative but in (16), the subject argument is not an agent/causer but is an experiencer of an action denoted by VP. I argue for thematic similarities between (16) and the experiential have construction in (11). On the basis of empty 1-functors, I suggest that the Japanese construction can be accounted for in a similar way to (11).

³ I changed a topic marker -wa in the original example to a nominative Case marker -ga in order to circumvent irrelevant issues of topic markings. I make the same modification to similar examples in Chapter 4.
1.4 Organization of the Thesis

This thesis is organized as follows. Chapter 2 presents a framework of l-syntax and essential proposals about l-functors. Beginning with a review of previous analyses of argument structure and lexical representation, I move on to Hale and Keyser's (1993, 1994) and Déchaine's (1996) theories of l-syntax. Taking these papers as a point of departure, I develop a conception of l-syntax and its relation with traditional s-syntax. I then turn to developing a theory of l-functors, which forms the proposals by which the property of light heads is derived.

In Chapter 3, I demonstrate how the theory of l-functors presented in Chapter 2 predicts the essential properties of the constructions exemplified in (11-13). I discuss the passive constructions in (13), the have constructions in (11), and examine the simultaneous appearance of a passive morpheme and have, illustrated by (12). I also propose an l-syntax-based analysis of alienable and inalienable possession.

In Chapter 4, I extend my theory of l-functors to possessive D. I also propose that certain Cases are determined by l-functors and l-syntactic heads. I show that my analysis of Case is empirically supported by possessive D in general and the marked subject constructions in Hindi, including the ergative perfect construction. Finally, I examine the Japanese experiential transitive construction in (16).
CHAPTER 2
L-SYNTAX AND L-FUNCTIONS

2.1 Introduction

In this chapter, I lay out a model of syntax which will serve as the basis of the analyses developed in later chapters. In section 2.2, I present a detailed survey of previous studies of argument structure and lexical entries. The survey focuses on the development of hierarchical organizations of lexical properties, which I later propose to reformulate in syntactic terms, following Hale and Keyser (1993) and Déchaine (1996). Section 2.3 reviews some studies of morphology which claim some direct interaction between morphology and syntax. In section 2.4, I briefly discuss the elimination of the Projection Principle, which has indirectly made it possible to give the syntactic analysis of the lexicon which I adopt.

In section 2.5, I introduce two frameworks of l-syntax, which encode thematic and/or aspectual relations in terms of syntactic structure. One framework is that of Hale and Keyser (1993, 1994) and the other is Déchaine's (1996) revision of Hale and Keyser's work. In section 2.6, I propose my version of the theory of l-syntax, which is an elaboration of Déchaine's model. I develop an explicit system of l-syntax by spelling out necessary mechanisms. In order to build an explicit system with predictive power, I make several decisions concerning the properties of l-syntactic representations. Then, I demonstrate that the
resulting system predicts the existence of structures that are instantiated in English.

In section 2.7, I present a theory of l-functors (cf. Ritter and Rosen (1993)), which provides us with a principled explanation of the properties of light heads introduced in Chapter 1. Relying on the l-syntactic properties of lexical heads, the theory permits light heads to project into s-syntax under certain constraints. In section 2.8, I briefly discuss my basic assumptions about the semantically vacuous verb *be*, feature checking theory, and word order. Section 2.9 sums up the present architecture of syntax.

2.2 Development of Argument Structure

*Argument structure* is a theoretical construct that serves to map lexical semantic information to syntactic structure. In this section, I gives a detailed review of the development of the analyses of lexical properties, in particular, argument structure, prior to Hale and Keyser (1993). In the review, I make brief comments on insights that the present thesis adopts.

2.2.1 Generative Semantics

The structured nature of lexical representation is part of a general

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1. See also van Hout (1996: chapter 1) for a survey of lexical theories.
2. See also Dowty (1979) for a review of Generative Semantics.
agenda of several non-uniform analyses, which are collectively called Generative Semantics (see e.g. Gruber (1976), Lakoff (1970), Ross (1972), and McCawley (1973, 1982)). According to them, the structural properties of lexical meaning are syntactically represented. Here I briefly review Lakoff's (1970: Ch.5) analysis that represents aspectual properties of inchoative and causative verbs syntactically.

Lakoff postulates abstract inchoative and causative verbs. Let us call them \( V_{\text{inch}} \) and \( V_{\text{caus}} \) for the sake of exposition. \( V_{\text{inch}} \) essentially corresponds to the semantic function BECOME whereas \( V_{\text{caus}} \) corresponds to a semantic function CAUSE. Inchoative verbs such as harden and thicken are syntactically decomposed into \( V_{\text{inch}} \) and an adjective. A causative verb is analyzed as the complex of \( V_{\text{caus}} \) and an inchoative verb (namely, \( V_{\text{inch}} \) and an adjective).

Lakoff's analysis of inchoative verbs is intended to capture the virtual synonymy between the following pairs:

(1)  a. The metal hardened.
     b. The metal became hard.

(2)  a. The sauce thickened.
     b. The sauce became thick.

Lakoff assumes the following underlying structure for (2a):

---

3 I ignore technical details that are irrelevant to the present discussion.
In the course of the derivation, *thick* is raised to $V_{\text{inch}}$. The derived verb is spelled out as *thicken*, which yields (2a). (2b) is derived from the same underlying structure when $V_{\text{inch}}$ is assigned the phonological content *become*.

The causative counterparts of the verbs in (1, 2) are derived, according to Lakoff, by embedding an inchoative (small) clause, such as (3), as a complement of $V_{\text{caus}}$:

(4) a. John hardened the metal.

b. John thickened the sauce.

The adjective *thick* is raised into $V_{\text{inch}}$ and then into $V_{\text{caus}}$, which essentially gives rise to (4b).

---

4 The lower S is eliminated during the derivation.
In hindsight, Lakoff's (1970) analysis could be considered an analysis of the argument structure of inchoative verbs and their causative counterparts. In a sense, argument structure for these verbs contains the syntactic substructures of change of state and causation.\textsuperscript{5} A similar syntactic approach to lexical properties is revived by Hale and Keyser (1993) and adopted here.

2.2.2 Argument Structure and θ-roles

Stowell (1981) calls the lexical thematic representation of a predicate a θ-grid, which is a list of θ-roles with no internal structure. Consider the θ-grid of the verb *put* for instance:

(6) \textit{put}: <Agent, Theme, Location>

E.g. Brown put the keys on the table.

Without any internal structure, argument positions in the θ-grid are only distinguished by the θ-role labels they bear.

Subsequent studies have increasingly made it clear that argument structure is annotated with the information of how arguments are syntactically projected. For instance, Williams (1981) and Levin and

\textsuperscript{5} Despite the fact that Generative Semantics has addressed interesting questions on the semantic relatedness of the examples in (1, 2 and 4) and the more general question of what a possible word is, it was severely attacked mainly for its abstractness of the underlying structures proposed and the unrestricted power of transformations deriving surface structures. See, e.g. Newmeyer (1986) and Harris (1993) for details on the fate of Generative Semantics.
Rappaport (1986) have argued that θ-roles are listed in asymmetrical ways. Williams introduced the distinction between external and internal arguments, proposing that an argument which assumes the subject function is specified as an external argument. Williams underscores the external argument, as illustrated in (7):

(7) \( \text{put (agent, theme, location)} \)

Levin and Rappaport (op. cit.: 638) give a distinct argument structure:

(8) \( \text{put: agent <theme, location}> \)

A θ-role placed outside the brackets is the external role. Levin and Rappaport assume, like Williams (1980) and Rothstein (1983), that the external role is assigned via predication. The italicized role is assigned directly by the verb to the direct object. The third type of role, location in (8), is indirectly assigned by means of an appropriate preposition.

Rappaport and Levin (1988) point out that although the above type of argument structure specifies θ-role labels, these labels are not relevant to how arguments are mapped into syntactic position. Instead, it is the annotations that map each role into a certain syntactic position. For this reason, Zubizarreta (1987) and Rappaport and Levin (1988) have proposed the elimination of θ-role labels altogether. Thematic information is represented in lexical conceptual structure (LCS) (in the sense of Jackendoff (1987, 1990); see below). Instead of repeating thematic information, they map argument positions in LCS to positions
in argument structure. For example, the LCS of *put* can be informally represented as follows:

(9) \[x \text{ CAUSE } [y \text{ GO to } z]\]

This LCS is mapped into the following argument structures, depending on analyses:

    \[
    \text{put}^y, x; \text{ loc } P^z
    \]

b. Rappaport and Levin (1988):
    \[
    \text{put: } x <y, P_{\text{loc}} z>
    \]

In Zubizarreta's notation (10a), the notation 'Predicate^A, B; C' indicates that A is the internal argument, B is the external argument, and C is the oblique argument. C is further specified in (10a) as a locative preposition which takes z as an (internal) argument. Rappaport and Levin's (1988) notation (10b) is essentially the same as Levin and Rappaport's (1986) in (8), although \(\theta\)-role labels are replaced with variables and the indirect argument is specified with a mediator, the locative preposition in (10b).

These proposals for an elaborated argument structure have to be supplemented by some theory of the correspondence between argument structure and LCS. The argument structures reviewed above have nothing to say about how, for example, the agent argument in LCS is mapped into an external argument position. Logically, nothing prevents the argument position \(x\) in (10b) from being associated with the theme argument in LCS.

Jackendoff (1987, 1990) suggests a way to account for the lexico-syntactic mapping by proposing a highly structured LCS. Jackendoff
suggests that it is not necessary to assume that argument structure intervenes between LCS and the syntax. For example, Jackendoff (1990: 80) associates *put* with the following LCS:

\[(11) \quad \{\text{Event CAUSE} (\{\text{Thing}_i\}, \{\text{Event GO} (\{\text{Thing}_j\}, \{\text{Path TO} (\{\text{Place}_k\}))\})\}]]\]

The subscripts, \(i\), \(j\), and \(k\), ensure the correspondence between LCS arguments and grammatical function. The *Thing* argument with subscript \(i\) corresponds to the subject, the *Thing* argument with subscripts \(j\) corresponds to object, and the *Place* argument with subscript \(k\) corresponds to the PP argument. (11) is decoded as \(X\) causes \(Y\) to go to \(Z\), where \(X, Y=\text{Thing}\) and \(Z=\text{Place}\).' An example in which constants are inserted into (11) is given by (12). (12a) is the conceptual structure of (12b):\(^6\)

\[(12) \quad \text{a.} \quad \{\text{Event CAUSE} (\{\text{Thing}_i\text{MARY}\}_i, \{\text{Event GO} (\{\text{Thing}_j\text{BOOKS}\}_j, \{\text{Path TO} (\{\text{Place}_k\text{SHELF}\}_k))\})\}]]

\text{b. Mary put the books on the shelf.}

Another characteristic of Jackendoff's LCS is that it can derive \(\theta\)-roles such as the causer (the first argument of CAUSE), the theme (the first argument of GO), and the location (the argument of, e.g. ON).

Since Rappaport and Levin (1988), Zubizarreta (1987), and

---

\(^6\) Jackendoff (1987, 1990) proposes that LCS may have multiple tiers. (11, 12a) only show what Jackendoff calls a thematic tier. Jackendoff postulates another tier, an action tier. A thematic tier in (12) can be supplemented with an action tier in (i):

\[(i) \quad \{\text{AFF} ([\text{MARY}], [\text{BOOKS}])\}\]

The first argument of AFF (affect) is what Jackendoff calls actor; the second is the patient.
especially Jackendoff (1983, 1987, 1990), it has been widely believed that
θ-roles are derivative. This is a position taken by the present thesis as
well.

There is a long tradition of analyses which depend on θ-roles to
map arguments into syntactic positions. Some of them implement

---

Although it is not structure-oriented, Lexical-Functional Grammar
is worth mentioning as a θ-role oriented approach to lexico-syntactic
mapping. (see Bresnan (1982b), Bresnan and Kanerva (1989), Bresnan
and Moshi (1990), and the references cited there). According to Bresnan
and Kanerva (1989), traditional grammatical functions are decomposed
into two features [+/-r] and [+/-o]. The feature [-r] designates the
property of being semantically unrestricted. The feature [+o] designates
the property of complementing transitive predicates such as verbs and
adpositions, but not intransitive predicates such as basic nouns and
adjectives. Obliques are semantically restricted, hence [+r], and they may
complement basic nouns and adjectives, hence [-o]. The cross-sectional
reference to these features determine grammatical functions as follows:

(i) [-r, -o] SUBJ [+r, -o] OBL
[-r, +o] OBJ [+r, +o] OBJ

Another way to view the correspondence between the functions and the
features is given in (ii):

(ii) [-r] = SUBJ, OBJ [-o] = SUBJ, OBL
[+r] = OBJ, OBL [+o] = OBJ, OBJ

Bresnan and Kanerva propose that these features are canonically
associated with certain θ-roles. They give the following principles of the
association:

(iii) Agent

   | [-o]

(iv) Theme/Patient

   | [-r]

(v) Locative

   | [-o]

(iii) associates non-object functions with the agent; (iv) associates object
and subject with the theme/patient; and (v) associates oblique and
subject with the locative roles. Unlike Rappaport and Levin (1988), the
principles in (iii-v) directly associate the θ-role property with their
syntactic functions.
various versions of the *thematic hierarchy*. The thematic hierarchy was first proposed by Jackendoff (1972). Several variants have been subsequently proposed in the literature. (13) gives several examples:

(13) a. Agent>Location/Source/Goal>Theme

(Jackendoff (1972: 148))

b. Agent>Theme>Goal/Source/Location

(Carrier-Duncan (1985: 7))

c. Agent>Instrument/Manner/Accompaniment/
   Beneficiary>Patient/Theme>Goal  (Baker (1989: 544))

d. Agent>Instrument>Patient>Theme>Goal

(Bresnan and Kanerva (1989: 23))

Larson (1988) is one of the important analyses which employ the thematic hierarchy. Larson (p. 382) adopts the thematic hierarchy in (14) and proposes the linking rule given in (15):

(14) Agent>Theme>Goal>Obliques (manner, location, time,...)

(15) If a verb \( \alpha \) determines \( \theta \)-roles \( \theta_1, \theta_2, \ldots, \theta_n \), then the lowest role on the thematic hierarchy is assigned to the lowest argument in constituent structure, the next lowest role to the next lowest argument, and so on.

Larson further assumes the following principles:

(16) X-bar Principles:

a. \( XP \rightarrow \text{Spec } X' \)

b. \( X' \rightarrow X \ YP \)

---

8 See Baker (1996) for more references.
Every argument of a predicate $\alpha$ must be realized within a projection headed by $\alpha$.

Larson's X-bar principle conforms to what he calls the Single Complement Hypothesis. Larson restricts the number of complements to exactly one. Because of this, a dative construction such as (18a) cannot be assigned the underlying structure (18b):

(18) a. John sent a letter to Mary.
   b. 
      \[
      \begin{array}{c}
      \text{VP} \\
      \text{V} \quad \text{NP} \quad \text{PP} \\
      \text{send} \quad \text{a letter} \quad \text{to Mary}
      \end{array}
      \]

Instead, Larson's theory assigns (18a) the underlying structure (19):

(19) 

The verb *send* has three $\theta$-roles to assign: the goal, the theme, and the agent. Due to the linking rule in (15), the goal role, which is the lowest in the thematic hierarchy, is assigned to the lowest syntactic position within VP. It must be in the complement position. The next lowest role,
theme, is assigned to the next lowest position within VP, namely, the specifier of VP.

According to Larson, an empty V is projected to accommodate the agent argument. The agent role is assigned to an argument in the specifier position of the empty V when the verb send is adjoined to the empty V. This satisfies the linking rule since the agent, the highest argument in the thematic hierarchy, is placed in the highest syntactic position. Furthermore, because verb raising places the Spec of the upper VP within a projection headed by send, the derived structure satisfies the principle in (17).\(^9\)

Larson’s theory maps positions in argument structure to syntactic positions via the thematic hierarchy and the linking principle in (17). In this type of analyses that hinge on the thematic hierarchy for linking, \(\theta\)-roles, whether primitive or derivative, play crucial roles for the lexico-syntactic mapping.

The present thesis rejects the thematic hierarchy and suggests an alternative analysis for lexico-syntactic mapping.

\subsection*{2.2.3 Argument Structure and Aspect}

There is another fairly recent line of argumentation that points to replacing the function of \(\theta\)-roles with that of \textit{aspectual} properties. This

\(^9\) Larson suggests in his fn. 49 that each argument must be governed by its head at some derivational stage.
type of approach includes Tenny (1987) and Pustejovsky (1988, 1991). They are based on aspectual classification of verbs along the lines of Ryle (1949), Vendler (1967) and Dowty (1979) (cf. also Verkuyl (1972, 1993)).

Vendler (1967) classifies verbs into four types: state, activity, achievement, and accomplishment. Examples are given below, cited from Van Valin (1990):

(20)  

a. States:  
The book is heavy.  
The watch is broken.  
b. Activities:  
The children shouted.  
Susan ran.  
c. Achievements:  
The watch broke.  
Susan arrived at the house.  
d. Accomplishments:  
Linda threw the hat on the table.  
Susan ran to the house.

To give an explanatory account for these classes, Dowty (1979) proposes to decompose some of them on the basis of primitive predicates such as BECOME, CAUSE, and DO and reveals underlying relations between the classes. BECOME and CAUSE are adopted from Lakoff (1970) and

---

McCawley (1973) and DO from Ross (1972). Their functions can be summarized as follows:

(21)  
   a. BECOME indicates change of state.  
   b. CAUSE indicates a causal relation between two events.  
   c. DO indicates agentivity.

Each verb class is assigned a semantic representation called *logical structure*, given in (22). While stative and activity predicates are postulated as primitives ($P_s$ and $P_A$, respectively in (22)), achievements are derived from statives in terms of BECOME as in (22c) and accomplishments are derived from activities and achievements in terms of CAUSE as in (22d):

(22)  
   a. State: $P_s(x)$ or $(x, y)$  
   b. Activity: $(DO(x))[P_A(x)$ or $(x, y)]$  
   c. Achievement: $\text{BECOME } P_s(x)$ or $(x, y)$  
   d. Accomplishment: $\phi \text{ CAUSE } \psi$, where $\phi$ is normally $P_A$ and $\psi$ an achievement predicate.

(Adapted from Van Valin (1990: 224))

Some of the examples in (20) are assigned the following logical structures:

(23)  
   a. State: The watch is broken. $\text{broken (watch)}$  
   b. Activity: Susan ran. $\text{run (Susan)}^{11}$

---

$^{11}$ DO is optional.
c. Achievement:
The watch broke. \textbf{BECOME broken} (watch)
d. Accomplishment:
Susan ran to the house.
\textbf{[run (Susan)] CAUSE [BECOME at (house, Susan)]}

Dowty’s analysis sheds light on the internal structure of verbs in a different way from the \theta\text{-role oriented analyses. The \theta\text{-role oriented analyses might have captured generalizations regarding the semantic roles of arguments, but such roles are stipulations. Dowty’s insight is that verbs consist of more basic elements, from which \theta\text{-roles are derivable. I will follow this insight. However, following Lakoff (1970) in spirit, I assume that such basic elements are syntactic.

Next consider Tenny (1987). Based on Vendler/Dowty’s classification of verbs as a point of departure, Tenny proposes an analysis of the lexico-syntactic mapping based on the aspectual function of arguments. Tenny capitalizes on a specific aspectual function of internal arguments, namely, \textit{delimitedness}. Delimitedness is the property of an event to be bounded in time. A linguistically described event is delimited if there is some point in time after which the event is no longer continuing. For example, (24) describes an event of indefinite duration, thus, a nondelimited event:

(24) Kim sleeps/is sleeping in the silo.

In contrast, (25) describes an event of some duration having a definite temporal endpoint; hence a delimited event:
According to Tenny, delimitedness is an overarching notion that is used to derive activities, achievements, and accomplishments. Activities are nondelimited events whereas achievements and accomplishments are delimited events. Tenny reduces the difference between achievement and accomplishment to a difference in the duration of an event: an achievement is instantaneous while an accomplishment takes some time to finish.

Tenny makes the claim that delimitedness depends on a property of VP-internal arguments. The delimitation of an event is accomplished through some change in a VP-internal argument. The VP-internal argument, according to Tenny, 'measures out' an event over time. In (25), the progress of the event of eating an apple correlates with the progress of the consumption of the apple. The event is completed when the apple is totally consumed. In contrast, the external argument does not delimit the event. Tenny summarizes this idea as follows:

(26) Events are described linguistically as delimited through the scale provided by the direct argument, and they are delimited within the verb phrase; i.e., an event may be linguistically delimited by an internal direct or indirect argument, but not by an external argument.

(26) reveals correlations between the syntactic positions of arguments and their aspectual function. Tenny goes one step further by introducing the Aspectual Interface Hypothesis:
The mapping between cognitive structure and syntactic argument structure is governed by aspectual properties. Only the aspectual part of cognitive structure is visible to the syntax.

Based on (27), Tenny proposes the following ordered mapping procedure:

(28) a. Map an argument that is marked as a possible direct argument into the direct argument position. It receives structural accusative case.

b. Map other arguments marked as possible recipients of inherent case into oblique argument position within the VP (or positions as objects of prepositions).

c. Map an argument into external argument position. If there is an argument incapable of being mapped in (a) and (b) (this will usually be an agent), it must become an external argument.

Under this mapping procedure, the internal argument plays a crucial role in lexico-syntactic mapping whereas the external argument is the 'elsewhere' argument, not associated with an aspectually coherent property. Thus, the external argument is not inherently designated as such in the cognitive structure associated with a given lexical entry. (28) is unlike θ-role oriented analyses of the lexico-syntactic mapping discussed in section 2.2.3, because the syntactic realization of arguments is not controlled by θ-role labels. I follow the spirit of Tenny
and adopt an idea that a certain *subset* of aspectual notions are directly associated with syntax.

Pustejovsky (1988) is also based on Vendler/Dowty's classification of verbs. An important insight of this work is the derivation of primitive predicates such as CAUSE and BECOME from structure, which Pustejovsky calls *event structure*. Examples of event structure are given below with informal descriptions and representative predicates of each event-type (e: event individual; E: event type variable):

(29)  

a. State: an eventuality that is viewed or evaluated relative to no other argument: *sick, love, know*.\(^{12}\)

\[
S \quad | \\
| e
\]


\[
P \quad \bigwedge \quad e_1 \ldots e_n
\]

c. Transition: an eventuality evaluated relative to another eventuality:

\[
T \quad \bigwedge \quad E_1 \quad E_2
\]

E.g. \(E_1 = P \) and \(E_2 = S\):

Accomplishment: *build, draw, destroy:*

---

\(^{12}\) The term 'eventuality' originates in Bach (1981). Pustejovsky uses it as a generic cover term for state, process, and transition.
An eventuality that is viewed relative to no other argument in (29a), in effect, gives rise to an eventuality that lacks boundaries. This corresponds to a state. (29b) gives a sequence of identical eventualities, which corresponds to a process or an activity, which lacks a particular end point. In (29c), the capital E represents an event type variable that ranges over actual event types. This variable is a crucial device that introduces recursion into the system. One possibility is indicated in the example, namely, $E_1=P$ and $E_2=S$. Since $P$ and $S$ are themselves event structures on their own, the resulting structure constitutes a complex (recursive) eventuality that consists of a process and a (resulting) state. It corresponds to an accomplishment.\(^\text{13}\)

Notice that the representation of accomplishments in (29c) does not contain either CAUSE or BECOME. They are read off from event structure. CAUSE is defined as the branching structure of $T$: the event in the first branch causes the event in the second branch. The branching structure of $T$ also derives BECOME because the state in the second arises as a result caused by the event in the first branch. Hale and Keyser (1993) inherit these structural representations of CAUSE and BECOME, but regard other aspectual properties as irrelevant to argument structure.

\(^{13}\) See Pustejovsky (1995) and van Hout (1996) for further developments in event-structure theoretic analyses of the lexicon.
2.2.4 Θ-roles and Aspect

Let us turn to Grimshaw (1990), which incorporates insights from both thematic and aspectual analyses. Grimshaw encodes structural asymmetry directly into argument structure on the basis of the thematic hierarchy.¹⁴ Grimshaw's analysis is distinguished from the other analyses that depend on the thematic hierarchy, because her lexical representations are two-tier structured representations constructed in accordance with the thematic hierarchy (30a) and the aspectual hierarchy (30b):

(30) a. (Agent(Experiencer(Goal/Source/Location(Theme))))
    b. (Cause(other(...)))

Based on the two hierarchies, Grimshaw redefines the external argument as the argument which is maximally prominent. That is, it is the highest argument in both hierarchies in (30). This definition accounts for the special 'prominent' status of the external argument.

It follows from the theory, for example, that psychological causatives do not have an external argument, that is, a maximally prominent argument, because the most prominent arguments in the two hierarchies do not coincide. Consider the following example:

¹⁴ As Grimshaw remarks (p.3), her attempt is a development of Hale (1983), in which the external argument is in effect higher than internal arguments in the argument structure. This idea makes it possible to state the c-command relation on the basis of argument structure for binding theoretic purposes.
(31)  a. The building frightened the tourists.

b.  frighten  (x (y))  (x=Experiencer; y=Theme)  
   2 1  (1=Cause; 2=non-Cause)

(31b) is the argument structure of the psych causative *frighten*. It indicates that *frighten* has the experiencer and the theme roles. Due to the thematic hierarchy in (30a), the two argument positions are mapped into the asymmetrical argument structure (x (y)), in which x=experiencer, y=theme, and parenthesizing indicates that x is placed higher than y. In the aspectual hierarchy, however, the theme argument (assigned 1) is placed higher than the experiencer argument (assigned 2) because the theme argument is the cause of the fear in the experiencer. This mismatch in the two hierarchies gives rise to the lack of an external argument in the argument structure of *frighten*.

If we assume that passive can suppress only an external argument, Grimshaw’s analysis predicts that psych causatives do not have corresponding verbal passives. This prediction is borne out. As Grimshaw (pp. 113-114) argues, passive forms of psych causatives like *frightened* are indeed adjectival. For example, just like adjectives, they allow negative *un*-prefixation and occur as complements to the verbs that select APs (e.g. *remain* and *seem*).

Grimshaw attempts to derive the aspectual hierarchy from event structure in the sense of Pustejovsky (1988). Pustejovsky’s event structure for accomplishments in (29c) can be formulated in a tree-diagram as follows:
Based on (32), Grimshaw gives the following generalization:

(33) An argument which participates in the first sub-event in an event structure is more prominent than an argument which participates in the second sub-event.

Since a cause is always part of the first sub-event and a theme always participates in the second state component, it follows from (33) that the cause is more prominent than the theme. Grimshaw also assumes that the highest rank (1) is assigned to the argument that participates in the first sub-event while the second rank (2) is assigned to the argument that participates in the second sub-event. This derives the ranking in (31b): since the building is the cause, it is assigned 1, and since the tourists is the theme, it is assigned 2.

(33) is a specific claim that event structure is one factor which determines syntactic structure. However, Grimshaw limits the role of aspect in lexico-syntactic mapping only to (32), a causative representation.

2.2.5 Arguments and Functional Projection

Departing from the standard analysis of argument structure, Marantz (1984) and Kratzer (1993) both reach the conclusion that the external θ-role is not specified at all in the lexicon.
Marantz (1984) argues that an external argument is not a true argument of verbs but an argument of a predicate which consists of a verb and its argument(s).\(^\text{15}\) Marantz points to an asymmetry between an external argument and internal arguments. Compare (34) and (35):

\begin{quote}
(34)  a. throw a baseball
       b. throw support behind a candidate
       c. throw a boxing match (i.e. take a dive)
       d. throw a party
       e. throw a fit

(Marantz (1984: 25))
\end{quote}

\begin{quote}
(35)  a. The policeman threw NP.
       b. The boxer threw NP.
       c. The social director threw NP.
       d. Aardvarks throw NP.
       e. Throw NP!

(Marantz (1984: 26))
\end{quote}

The examples in (34) indicate that the semantic roles of the external arguments depend on the choice of an internal argument. The examples in (35) indicate, by contrast, that different external arguments do not imply different semantic roles for the internal argument.

Based on Marantz's observation, Kratzer (1993) develops a view of the lexicon in which external arguments such as agent and causer are

\(^{15}\) The idea that an external argument should be separated from internal arguments dates back to Chomsky (1965), in which the subject is excluded from the strict subcategorization frame.
not postulated in lexical entries. To account for the introduction of the external argument, Kratzer proposes a functional category *Voice*, the Spec of which hosts an argument. A semantic rule of Event Identification, which can be considered a particular formulation of predication, identifies the Spec argument of VoiceP as an external argument. Kratzer draws attention to a language like Malagasy where an overt causative morpheme introduces an agent argument. In Kratzer's analysis, the causative morpheme heads VoiceP. Kratzer's proposed structure is depicted in (36):

(36) VoiceP
    /\                      /
   DP  Voice'               Voice
  /\                           /
(external arg) Voice        VP
    causative morpheme

This analysis claims that the interpretation of an external argument is built into the functional projection Voice. Kratzer generalizes this type of argument introduction to all verbs and hypothesizes that no lexical verb has an external argument specified in its argument structure. This analysis captures the 'external' property of the external argument by literally making it 'external' to argument structure. Essentially the same analysis is adopted in Hale and Keyser (1993) but only for the agent/causer argument.

Borer (1993) utilizes functional projections in a more extensive way. Borer advances a model of syntax in which not only the external
argument but also the internal argument are licensed through a functional projection.

Borer proposes to eliminate the distinction between external and internal arguments in lexical entries and rejects any syntactic linking conventions based on the hierarchy in argument structure. Verbs are instead specified simply for the number of arguments they take. The thematic relations between a verb and its arguments are computed on the basis of syntactic structure and the basic meaning of the verb. For example, the delimitedness interpretation, in the sense of Tenny (1987), is determined by the Aspect projection immediately dominating VP:

\[
\text{(37)} \quad \begin{array}{c}
\text{AspP} \\
\text{NP}, \text{Asp'} \\
\text{Asp} \quad \text{VP} \\
\text{V}_{t} \quad \text{Asp} \quad \text{V} \quad \text{NP} \\
\text{t}_{t} \quad \text{t}_{i}
\end{array}
\]

This configuration is essential for the realization of aspectual properties. Following Tenny (1987), Borer claims that the NP in the Spec of AspP 'measures out' an event denoted by VP.\(^{16}\)

If Borer's approach is successful, it would eliminate the inevitable redundancy of hierarchical information of arguments in the lexicon (hierarchical argument structure), syntax (hierarchical structure of argument positions) and their interface (the thematic hierarchy). I will

\(^{16}\) Accusative Case is assigned to NP\(_{i}\) in (37). See also Tenny (1987) and Hendrick (1991) for the Aspect projection.
attempt to achieve the same goal through a different track, following Hale and Keyser (1993) and Déchaine (1996).

2.3 The Projection Principle

The discussion in the preceding section has revealed that there is a crucial similarity across theoretical camps. Namely, argument structure and/or lexical aspectual meaning are organized structurally.

One of the general principles is the thematic hierarchy, which mediates the lexico-syntactic mapping. A general conceptual question concerns the theoretical status of the thematic hierarchy. This notion is unavoidable in the traditional analysis which presupposes that argument structure is not syntactic. But what if the lexicon is syntactic?

This possibility was incompatible with Chomsky's (1981) Government and Binding theory in which the Projection Principle plays a crucial role in restricting syntactic derivations:

(38) The Projection Principle:

Lexical features must be represented at every syntactic level. Due to the Projection Principle, syntactic derivation cannot change semantic relations represented at D-structure. Thus, if a verb such as *sink* is lexically causative, it is causative throughout its syntactic derivation. The verb, for example, cannot be anticausativized in syntax. The Projection Principle, therefore, rejects a Lakovian approach.

Since Larson (1988), however, the Projection Principle has largely been abandoned in the principles-and-parameter approach. As we have
seen, Larson's analysis implies that D-structure is not a pure \( \theta \)-representation. This can be seen in dative constructions such as *John sends a letter to Mary* where the agent \( \theta \)-role still remains to be assigned at D-structure. The agent role is assigned to the Spec of the higher VP at a derived level of representation in which the verb *send* is adjoined to the higher verb, as in (39):

\[
(39) \quad \begin{array}{c}
\text{VP} \\
\text{NP} \\
\text{John} \\
\text{[agent]} \\
V \\
\text{send}, \\
V \\
\text{a letter} \\
V \\
\text{to Mary}
\end{array}
\]

The elimination of the Projection Principle has reopened theoretical options of Generative Semantics that represent lexical properties in genuinely syntactic terms, rather than in terms of nonsyntactic structural properties.

It is possible to entertain a general idea that syntactic structure determines semantic relations that words can express, such as agent and theme; and CAUSE and BECOME. Some causal element can be added during syntactic (structure-building) derivation to give rise to causation. If this approach turns out to be on the right track, we could eliminate the thematic hierarchy. The approach in effect abstracts away structured information of lexical properties (underlines, bracketing, event structure,
and so on) and puts it in syntactic structure. As will become evident in later sections, this approach has been taken by Hale and Keyser (1993).\textsuperscript{17}

2.4 Syntactic Morphology: Parallel Morphology

Let us turn our attention to another domain of grammar that often has been considered independent of syntax, namely, morphology. As a component that deals with words, it is closely related with argument structure or, more generally, the lexicon.

Borer (1988) argues for an autonomous component of morphology, which Borer terms Parallel Morphology.\textsuperscript{18} According to Borer, morphology is not part of the lexicon. Instead, it is a component that exists parallel to the lexicon and the syntax (and the phonology). Morphological principles may apply in either the lexicon or the syntax. Thus, word formation may apply to syntactic outputs.

Along the lines of Borer, Spencer (1991: 455) sketches his position essentially as follows:

\begin{center}
\begin{tikzpicture}

\node (morphology) at (0,0) {Morphology};
\node (lexicon) at (2,1) {Lexicon};
\node (syntax) at (2,-1) {Syntax};
\node (phonology) at (2,0) {Phonology};

\draw[->] (morphology) -- (lexicon);
\draw[->] (morphology) -- (syntax);
\draw[->] (morphology) -- (phonology);
\end{tikzpicture}
\end{center}

\textsuperscript{17} Lebeaux (1988) is also to be mentioned here. It is one of the earliest studies on language acquisition which suggest that the structural asymmetry in argument structure is represented by the familiar tree notation.

\textsuperscript{18} For more discussion of the relation between syntax and morphology, see, e.g. Anderson (1982), Di Sciullo and Williams (1987), Baker (1988) and Halle and Marantz (1993).
According to Spencer, morphological principles that apply in the lexicon account for derivational morphology, anticausatives (unaccusative formation from causatives), monoclausal causatives, and adjectival passives, and the like. Morphological principles that apply in the syntax account for regular inflection, biclausal causatives, verbal passives, and so on.

A specific analysis that permits the 'passive formation' to apply either in the lexicon or in the syntax has been proposed by Borer and Wexler (1987). They assume the following set of properties for the adjectival passive morpheme:

\[(41)\]
\[a. \quad [+V, -N] \rightarrow [+V, +N], \text{ resulting in the elimination of the accusative Case assigning feature.}\]
\[b. \quad \text{The elimination of the subject } \theta\text{-role} \]
\[c. \quad \text{The externalization of the internal } \theta\text{-role} \]

On the other hand, Borer and Wexler give the following properties for the verbal passive morpheme:

\[(42)\]
\[a. \quad [+V, -N] \rightarrow [+V], \text{ resulting in the absorption of the accusative Case.}\]
\[b. \quad \text{The passive morpheme absorbs the external } \theta\text{-role} \]

(and may optionally transmit it to the object of by).

Borer and Wexler argue that the differences between the properties of adjectival and verbal passives follow from the Projection Principle. The effect of the Projection Principle which is crucial to Borer and Wexler's analysis is its prohibition of any change of lexical specifications in
syntax. Therefore, the category-changing property given in (41a) and the elimination of a \( \theta \)-role in (41b) are direct violations of the Projection Principle. So is (41c), because it entails the elimination of the subcategorized object position to which the internal \( \theta \)-role is assigned. Therefore, these changes cannot be made in syntax. However, Borer and Wexler argue that these properties in (41) can be satisfied in syntax in alternative ways that meet the requirements of the Projection Principle. They give rise to the properties in (42), namely, the neutralization of the category type (42a), the absorption of the external \( \theta \)-role (42b), and no externalization.\(^{19}\) The neutralization of \([+V, -N]\) to \([+V]\) does not violate the Projection Principle because the neutralized output \([+V]\) is nondistinct from \([+V, -N]\). Neither does the absorption of the external \( \theta \)-role violate the Projection Principle because the role is not eliminated. Borer and Wexler conclude that the rule of passive morpheme affixation is one and the same for adjectival and verbal passives.\(^{20}\) Their differences follow from the Projection Principle and the levels where the passive rule applies.

Their unified analysis of adjectival and verbal passives can be strengthened if affixation is based on syntactic structure. For the

\(^{19}\) Borer and Wexler do not clarify why it is impossible not to apply externalization. It is conceivable, following Levin and Rappaport (1986), that externalization is associated with adjectives in general and therefore does not apply to the verbal passive participles which are not genuine adjectives.

\(^{20}\) For more discussion of adjectival and verbal passives, see Wasow (1977, 1980), Anderson (1977), Bresnan (1982a), Levin and Rappaport (1986), and Dubinsky and Simango (1996).
affixation of the passive morpheme to be truly one and the same, morphology must be based on syntactic structure even when applied in the lexicon. Only in this view can morphological processes that may either apply in the lexicon or the syntax be accounted for in a strictly uniform fashion.²¹

2.5 Lexical Syntax

As a rather natural development of the theory of argument structure and the lexicon, a view has emerged that lexical properties are so highly structured that the lexicon is not a simple list of idiosyncratic, and therefore unpredictable, properties of words. As we have seen, such structured properties have been formulated in various ways in the literature. After Generative Semantics was rejected for its excessive generative power (see footnote 5), most lexicalist analyses have concentrated on elaborating lexical mechanisms, in particular,

---
²¹ There is an analysis that suggests that cross-component application of rules/principles may not be restricted to morphological rules/principles. Keyser and Roeper (1984) propose to apply Move α in the lexicon. The lexical Move α operates on the subcategorization frame of verbs such as causative sink and gives rise to its unaccusative variant, as illustrated in the following:

(i) sink: [NP [ vp _ [NP]]
(ii) sink: [NP, [vp _[t]]]

The subcategorization frame in the sense of Keyser and Roeper (op. cit.) is different from the traditional one because it includes the subject position. The object NP in (i) is moved to the subject position, leaving a coindexed trace in the original position. Though not directly related with Keyser and Roeper, Hale and Keyser (1993) apply head movement, a type of Move α, in their syntactic version of argument structure. See the next section.
postulating general principles governing the mapping of lexical information onto syntax (such as the thematic hierarchy and the Aspectual Interface Hypothesis). One rationale for such a direction was the Projection Principle. The Projection Principle is, however, no longer maintained.

Recently, Hale and Keyser (1993) have revived a syntactic analysis of argument structure. Namely, argument structure is a kind of syntax, which they call l-syntax. The lexical representation is organized in syntactic terms such as categories and structural relations. These derive the asymmetries that are encoded in the previous studies in ways independent of syntactic structure (event structure and diacritics such as underlines or brackets). Hale and Keyser call such lexical representation Lexical Relational Structure (LRS). Their essential idea is that words are semantically complex and that such word-internal semantic complexity can be (at least partially) represented in terms of syntactic structure. We may refer to such complex words as 'phrasal' words; 'phrasal' at the level of word-internal syntax. Hale and Keyser suggest that 'lexical phrasality' is ubiquitous. Namely, most words are phrasal word-internally.

Hale and Keyser's work is framed in a recent model of the principles-and-parameters approach to syntax. It is a novel and highly ambitious enterprise which attempts to derive the range of possible words from general principles of syntax. Let us take a look at Hale and Keyser's analysis of argument structure.
2.5.1 Hale and Keyser (1993)

Hale and Keyser observe the semantic/thematic parallelism between the following sentences:

(43)  a. She shelved her books.
      b. She put her books on the shelf.

In both of them, the direct object argument *her books* is the theme which changes the location.

Adopting Larson's (1988) VP-shell structure, Hale and Keyser (1993) assign a sentence such as (43b) an LRS such as (44):

(44)  \[
\begin{array}{c}
  \text{V} \\
  \quad \text{VP} \\
  \quad \quad \text{NP} \\
  \quad \quad \quad \text{(her books)} \\
  \quad \quad \quad \quad \text{V} \\
  \quad \quad \quad \quad \quad \text{PP} \\
  \quad \quad \quad \quad \quad \quad \text{put} \\
  \quad \quad \quad \quad \quad \quad \quad \text{P} \\
  \quad \quad \quad \quad \quad \quad \quad \quad \text{NP} \\
  \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \text{(on the shelf)}
\end{array}
\]

Head movement applies to (44), as illustrated in the following:

(45)  \[
\begin{array}{c}
  \text{V} \\
  \quad \text{VP} \\
  \quad \quad \text{NP} \\
  \quad \quad \quad \text{(her books)} \\
  \quad \quad \quad \quad \text{V} \\
  \quad \quad \quad \quad \quad \text{PP} \\
  \quad \quad \quad \quad \quad \quad \text{put} \\
  \quad \quad \quad \quad \quad \quad \quad \text{P} \\
  \quad \quad \quad \quad \quad \quad \quad \quad \text{NP} \\
  \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \text{(on the shelf)}
\end{array}
\]
The head movement conforms to a locality/minimality condition, the effect of which can be stated as the Head Movement Constraint (Travis (1984) and Baker (1988)):

\[\text{(46) The Head Movement Constraint (HMC)}\]

\[\text{An } X^0 \text{ may only move into } Y^0 \text{ that properly governs it.}\]

Hale and Keyser propose to capture the thematic relation in the other example (43a) by assigning the same LRS as (44), with a different set of lexical items inserted. Thus, (43a) is assigned the underlying LRS in (47). The arrows indicate its derivational process: N \text{shelf} is adjoined to P, to the lower V, and to the higher V, each step observing the HMC:

\[\text{(47)}\]

\[\begin{array}{c}
V \\
\text{VP} \\
\text{NP} \\
\text{(her books)} \\
\text{PP} \\
P \\
\text{NP} \\
\text{shelf}
\end{array}\]

\[\text{Following Baker (1988), Hale and Keyser assume that the HMC is derived from the Empty Category Principle (Chomsky (1981, 1986b)):\}

\[\text{(1) The Empty Category Principle (ECP)}\]

\[\text{[e] (an empty category) must be properly governed.}\]

\text{The minimalist approach has been attempting to replace the ECP with some more general condition of minimality (on shortest movement). See Chomsky (1995). The exact formulation of the principle, however, is tangential to the present discussion.}\]
This syntactic view of argument structure explains the absence of the following sentence in terms of the locality/minimality condition:

(48) *He shelved the books on.

(48) would be derived in the way illustrated in (49):

(49)

In (49), the first step of the movement skips a closer head P, violating the HMC.

Hale and Keyser (1993, 1994) give category-specific definitions of what structures a category projects. For example, P is a relational category which, by definition, selects two arguments (a specifier and a complement). N selects no argument; it is saturated by itself. V selects a complement but its specifier is projected only when it is required in accordance with the principle of Full Interpretation which requires that every element must receive an appropriate interpretation (Chomsky (1986a)). In the above examples (44, 47), the lower V projects its Spec position because it is required by its PP complement. The upper V in the above examples does not project its Spec position in l-syntax because it
is not forced by anything in l-syntax. In other words, the structure is already saturated. However, an argument is supplied in s-syntax for reasons of s-syntactic predication.

The l-syntactic approach does not regard θ-roles as primitive. Instead, the l-syntactic structure determines thematic relations, as well as some aspectual relations. In the above examples, V is associated with the elementary notional type of a dynamic event. The specifier of the V-VP configuration corresponds to the traditional notion of causer or agent. More basically, the upper V in the V-VP configuration ‘implicates’ the event denoted by the VP complement, giving rise to the causative interpretation. This seems to stem from Pustejovsky (1988) that has implemented an event-structural approach to derive these relations.

Another kind of semantic implication derived by the LRS is illustrated in the following:

(50)  a. The cook thinned the gravy.

b. \[
\begin{array}{c}
V \\
\begin{array}{c}
V \\
\begin{array}{c}
NP \\
\text{the gravy}
\end{array}
\end{array} \\
\begin{array}{c}
V \\
\text{AP} \\
\text{thin}
\end{array}
\end{array}
\]

The lexical category A is associated with the notional type ‘state’. Structure (50b) is thus associated with the interpretation in which a dynamic event denoted by V implicates a state. Hale and Keyser (p. 73) suggest that the lower V in (50b) corresponds to Pustejovsky's (1988)
definition of 'Transition', a change resulting in a state. The lower V derives the function of BECOME (in Lakoff (1970), McCawley (1973), and Dowty (1979)). Hale and Keyser (p. 82) also suggest that an 'affected' argument can be identified with the 'internal' subject, i.e. the argument projected as the specifier of the VP in (50b).

A consequence of Hale and Keyser’s analysis is that it can account for the absence of the causative use of unergative verbs in English.23

(51) a. *The clown laughed the child.
   (i.e., got the child to laugh)

   b. *The alfalfa sneezed the colt.
   (i.e., made the colt sneeze)

   c. *We’ll sing Loretta this evening.
   (i.e., have Loretta sing)

   d. *Good feed calved the cows early.
   (i.e., got the cows to calve)

   (Hale and Keyser (1993: 74))

Consider the following l-syntactic structure that would be assigned to (52a):

---

23 There are a number of languages in which the causativization of unergative verbs is allowed. See Hale and Keyser (1993) for a discussion of Papago (Tohono O'odham).
When *laugh* is adjoined to *V₂* and then to *V₁*, it gives rise to (51a). However, *NP₁* cannot be projected in 1-syntax because both *V₂* and *NP₂* are already saturated. Thus, (52) is ill-formed. The 1-syntactic structure associated with unergative verbs must be the following:

(53) \[ V' \]
    \[ V \]
    \[ NP \]
    \[ laugh \]

Hale and Keyser associate the *V*-NP structure with an action or dynamic event that "implicates" an entity. This corresponds to the notion that the implicating event is completed, or perfected, by virtue of the "creation", "production", or "realization" of the relevant entity. An argument is inserted when (53) enters s-syntax. This argument roughly corresponds to the 'agent'. Though Hale and Keyser are vague about how this argument is inserted, it is eventually raised to the Spec of IP for Case-theoretic reasons. As I have discussed in Section 2.2.3, Marantz (1984) and Kratzer (1993) both assume that external arguments are not part of lexical meaning of predicates. In the 1-syntactic theory, the
exclusion of the external argument from l-syntax (=argument structure) follows from the architecture of the lexicon.

2.5.2 Hale and Keyser (1994): Lexical Categories

Extending their syntactic theory of argument structure, Hale and Keyser (1994) propose a configurational definition of lexical categories, modifying the analysis they give in the 1993 paper. These are given in (54).\(^{24}\)

\[(54)\]

\[\begin{array}{l}
\text{a. } v: \text{head-complement} \quad \text{E.g. } [v \text{ make a cake}]
\\
v
\\
v \quad \text{compl}
\\
\\
\text{b. } p: \text{spec-head-complement} \quad \text{E.g. } [p \text{ Mary with John}]
\\
p
\\
\text{spec}
\\
\\
p \quad \text{compl}
\\
\\
\text{c. } a: \text{spec-head} \quad \text{E.g. } [z \text{ Mary tall}]
\\
z
\\
\text{spec}
\\
\\
z \quad a
\\
\\
\text{d. } n: \text{head} \quad \text{E.g. } [n \text{ cat}]
\\
n
\end{array}\]

\(^{24}\) I use small letters \(v, p, a,\) and \(n\) for lexical categories, and \(V, P, A,\) and \(N\) for s-syntactic categories because lexical categories in the sense of Hale and Keyser should be distinguished from s-syntactic categories for reasons to be discussed.
Hale and Keyser give an informal characterization of the properties of lexical categories in terms of the syntactic relations ‘subject’ and ‘complement’, which are reminiscent of Jackendoff’s (1977) feature system. These relations define lexical categories as illustrated in the following table:

\[(55) \begin{array}{ccc}
+\text{subject} & -\text{subject} \\
+\text{complement} & p & v \\
-\text{complement} & a & n
\end{array}\]

(55) gives rise to the configurations in (54). However, as Hale and Keyser point out, what is significant in the theory is configurations, and not category labels.

Each configuration corresponds to a semantic relation or a semantic type. (54a) corresponds to a dynamic event that ‘implicates’ a semantic type denoted by a complement. In general, the complement can be complex by having its own internal structure. (54b) corresponds to a relation (or interrelation in the terminology of Hale and Keyser (1993)), which by definition involves two entities; hence the fully projected structure.\(^{25}\) (54c) corresponds to predication; the category \(a\) corresponds to a property. Finally, (54d) corresponds to an entity.

\(^{25}\) A closely related analysis is made by Tremblay (1995), which claims that the lexical properties of semantically vacuous prepositions such as French \(\textit{avec} ‘with’\) are derivable from the general properties of prepositions as defined in UG. In particular, Tremblay argues for a fully projected [spec x compl] configuration for a relational category, i.e. the preposition. Tremblay’s leading idea is the same as Hale and Keyser’s (1993, 1994): that lexical properties can be configurationally represented.
In the configuration (54c), the property denoted by \( a \) is predicated of the referent that occupies the specifier position. If so, one might wonder why a simple structure like (56) is not adopted:

(56) \[
\begin{array}{c}
\text{specifier} \\
\end{array}
\begin{array}{c}
x \\
\end{array}
\]

The answer is that structure (56) is unavailable in Hale and Keyser's (1993, 1994) system of l-syntactic structure. When a head is combined with another constituent, the latter must be a complement, as illustrated in the following:

(57) \[
\begin{array}{c}
x \\
\end{array}
\begin{array}{c}
\text{complement} \\
\end{array}
\]

Hale and Keyser (1993) assume that a specifier is projected only when a head is combined with a complement. Thus, (58) is the only structure that introduces a specifier:

(58) \[
\begin{array}{c}
\text{specifier} \\
\end{array}
\begin{array}{c}
x \\
\end{array}
\begin{array}{c}
\text{complement} \\
\end{array}
\]

This assumption is in conflict with \( a \), which requires a specifier-head without a complement by definition (see (55)). To solve this conflict, another category \( z \) mediates between \( a \) and its specifier: \( z \) takes \( a \) as a complement and projects a specifier. According to Hale and Keyser (1993, 1994), this specifier functions as a specifier of \( a \). The structure is repeated in (59):
The universal l-syntactic categories, \( \nu, p, a, \) and \( n \), do not directly correspond to morphosyntactic (s-syntactic) categories, \( V, P, A, \) and \( N \). Languages vary as to how these universal categories are associated with morphosyntactic categories. For example, Hale (1995: 3) shows that the morphosyntactic realization of the relational head (\( p \)) shows great diversity. It is realized as \( P \) or \( V \) in English (60a) and Yoruba (60b), suffixal \( P \) or (suffixal) \( N \) in Warlpiri (60c), or suffixal \( P \) or suffixal \( V \) in Lardil (60d). These are illustrated by the following examples from Hale (op. cit.):

(60) a. English
   The coyote has a tail.

b. Yoruba
   ajá n'írù (< ní irù).
   dog HAVE.tail
   'The dog has a tail.'

c. Warlpiri
   warnapari Ø ngirti-parnta.
   dingo AUX.3 tail-WITH
   'The dingo has a tail.'
Likewise, it is not implied that all verbs are assigned the configuration in (54a). As defined by Hale and Keyser (1993), (54a) is a configuration whose interpretation is that an action or dynamic event implicates an entity. A deadjectival verb *clear* is another verb which is not assigned (54a). Consider:

(61) a. The screen cleared.
    b. John cleared the screen.

Hale and Keyser (1994) assign (61a) the structure given in (62a) and (61b) the structure in (62b):

---

---

(62a) has configuration (54c), where $z=v$. In the process of the derivation, *clear* is raised to $v$. This structure and the derivation capture the deadjectival nature of the inchoative verb *clear*. (62b), by contrast, contains the $v-v$ configuration which is defined as causative by Hale and Keyser (1993). As mentioned in the previous section, the 'internal' subject in (62b) is identified with an 'affected' argument and an agent argument is introduced in s-syntax.

2.5.3 Déchaine (1996)

Déchaine (1996) diverts attention from verbs to adjectives and reveals that quite productive morphological processes center around adjectives. Paying special attention to complement-taking adjectives such as *-able*, *-ish*, and *-en*, Déchaine claims that these stative heads can select a complement and further can project a specifier on its own. To account for the complement-taking statives, Déchaine proposes to neutralize categorial distinctions and posit the following category-neutral configurations:

\[(63) \quad \begin{align*}
\text{a.} & \quad \begin{array}{c}
\text{x} \\
\text{x} \\
\text{x compl}
\end{array} \\
\text{b.} & \quad \begin{array}{c}
\text{x} \\
\text{spec} \\
\text{x} \\
\text{x compl}
\end{array} \\
\text{c.} & \quad \text{x}
\end{align*}\]
Déchaine assumes that the complement-taking statives head (63b). I will discuss examples in detail in section 2.6.7.2.

But then, how are intransitive statives such as those in (64) analyzed?

(64)  
  a. The man is tall.
  b. The wall is red.

Déchaine suggests that they are also associated with the spec-head-complement configuration, in which the complement is incorporated into the head. For example, *tall* in (64a) is derived from *[spec x compl]*, analogous to *have tall-ness*:

(65)

\[
\begin{array}{c}
\text{x} \\
\text{spec} \\
\text{tall}
\end{array}
\]

Since the spec-head-complement configuration is also a configuration for relational heads, the distinction between the predicative category (\(a\)) and the relational category (\(p\)) is neutralized in Déchaine's analysis. One of the virtues of this neutralization is that it captures a higher-level generalization that \(a\) and \(p\) are both stative.

---

27 Hamida Demirdache (p. c.) raises a question of how this analysis of English adjectives is compatible with the morphological derivation of English nouns such as *tallness*. *Tallness* appears to be derived from an adjectival stem *tall* but (64) appears to imply that adjectival *tall* is derived from nominal *tallness*. However, the derivational direction from *tallness* to *tall* is not implied in (64). (64) indicates that a category-neutral lexical head *tall* gives rise to adjective *tall* when it is incorporated into \(x\) and is morphosyntactically realized as A. The nominal *tallness* should be derived from a category-neutral head *tall* when *tall* remains in the complement position in (64).
Hale and Keyser (1993, 1994) do not discuss adjectives such as *tall*. It is left open in their system how adjectives are structurally represented. Suppose that *tall* is assigned the following structure which is the structure for the deadjectival verb in *The screen cleared*:

\[(66) \quad \begin{array}{c}
  z \\
  \text{man} \\
  \begin{array}{c}
    z \\
    a \\
    \text{tall}
  \end{array}
\end{array} \]

It is, however, unclear what *z* is. It cannot be *V* because *V* is a dynamic category that implicates a denotation of its complement. If *z* is *V* in (66), the representation should express a change of state, something like ‘The man becomes tall.’ It is not synonymous with the simple stative interpretation of (64a), which does not imply any change of state. On the other hand, *z* cannot be *A* in principle because *A* does not take a complement by definition in Hale and Keyser (op. cit.).

However, in the category-neutral l-syntax, *z* in (66) is not assigned any category. If we assume that *z* is realized as *A* when its complement is incorporated into it (as in (65)), the question of what *z* is does not arise.

Since the *a*-p distinction is neutralized into the spec-head-complement configuration, it is possible in Déchaine’s analysis to attribute stativity to this configuration. Furthermore, Déchaine defines the head-complement configuration (63a) as denoting an event. Therefore, the state-event contrast is expressed by the following configurational contrast:
(67) a. State

```
  x
 /    \
spec  compl
 x
```
b. Event

```
  x
 /    \
 x    compl
```

I adopt this configurational contrast in my analysis which I turn to.

2.6 The Framework of L-syntax

In this and the next sections, I propose a specific model of l-syntax which is based on Hale and Keyser (1993, 1994) and Déchaine (1996). In section 2.6.1, I propose a model of grammar and make a claim on how l-syntax is related with other components of grammar such as s-syntax and morphology. In sections 2.6.2-2.6.4, I discuss details of l-syntax, laying out principles that projects l-syntactic configurations and further constraints on them. Sections 2.6.5 and 2.6.6 demonstrate, on the basis of Déchaine (1996), that structural combinations permitted by the present l-syntactic theory account for various constructions in English. In section 2.6.6.2, I depart from Déchaine in accounting for binding relations in l-syntax. Section 2.6.7 discusses the s-syntactic introduction of an agent/causer argument. Section 2.6.8 gives final remarks on how l-syntax and s-syntax are independent components.
2.6.1 General Organization of Grammar

The theory of l-syntax is a theory of argument structure. The l-syntactic theory of argument structure takes the position that argument structure is expressible by means of a restricted set of syntactic primitives.

Argument structure is a level of representation that mediates lexical meaning (represented for example as lexical conceptual structure in the sense of Jackendoff (1983, 1990)) and s-syntactic structure. Such an intermediate level is necessary because only some aspects of lexical meaning seem to contribute to deriving syntactic structure. Thus, argument structure consists of an impoverished representation derived from lexical meaning. This raises a question of how argument structure is derived from more comprehensive lexical meaning. Elaborating on Déchaine (1996), I will propose principles of mapping lexical meaning to argument structure, i.e. l-syntax. Specifically, I will claim that the crucial property of a lexical head that determines its argument (l-syntactic) structure is whether it denotes an event, a state, or an entity. The projected l-syntactic structure is transparently 'mapped' into s-syntactic structure. Indeed, no mapping is necessary because argument (l-syntactic) structure is syntactic (s-syntactic) structure. This eliminates principles such as the thematic hierarchy which map (non-syntactic) argument structure to syntactic structure.
An important property of 1-syntax follows from the assumption that 1-syntactic structure is argument structure. Namely, 1-syntax is the syntax of arguments, or \textit{A-syntax}, because argument structure consists only of A-positions.\textsuperscript{28} \textsuperscript{29} Therefore, 1-syntax does not license an operator. An operator is licensed in an A'-position, which is dealt with by the syntax of non-arguments/operators, or \textit{A'-syntax}.\textsuperscript{30}

L-syntax should be related with at least three components: s-syntax, morphology, and the lexicon. First of all, consider s-syntax. This component consists of both A-syntax and A'-syntax. S-syntactic structure may contain A'-positions that can license operators. Canonical A'-type categories are functional projections such as C, which licenses interrogative operators, and D (\textit{the}), which bears quantificational force. In addition to A'-positions, s-syntax deals with A-positions, namely, arguments. For example, Binding Theory is concerned with arguments. Since A-syntax is the property of both 1-syntax and s-syntax, it is most natural to hypothesize that one and the same A-syntactic properties are shared by 1-syntax and s-syntax.

Second, let us consider morphology. Hale and Keyser (1993) and Déchaine (1996) claim that 1-syntax is the syntax of words. This effect can be derived from the architecture of grammar. I assume that words

\textsuperscript{28} The A-position corresponds to the L-related position, which is defined by Chomsky and Lasnik (1995: 64) as the specifier or complement of a feature of a lexical head.

\textsuperscript{29} Heads are consistently relevant to both 1-syntax and s-syntax.

\textsuperscript{30} If defined appropriately, A-positions could include positions for manner adverbs but not positions for quantificational adverbs like \textit{always}, which occupies A'-positions in s-syntax.
can be defined as morphological primitives.\textsuperscript{31} Then, if 1-syntax overlaps morphology, it follows that 1-syntax deals with the internal structure of morphological primitives, namely, words.

I propose that 1-syntactic structure is derived from lexical conceptual structure along the lines of Jackendoff (1983, 1987, 1990), Zubizarreta (1987), and Rappaport and Levin (1988). Further assuming that morphology is part of the lexicon, the relation among 1-syntax, s-syntax, morphology, and the lexicon can be depicted as in (68):\textsuperscript{32}

(68)

\begin{center}
\begin{tikzpicture}
  \node (lex) {Lexicon};
  \node (lcs) [right of=lex] {LCS};
  \node (morph) [below of=lex] {Morphology};
  \node (l synt) [right of=morph] {L-syntax};
  \node (a synt) [right of=l synt] {A-syntax};
  \node (s synt) [below of=l synt] {S-syntax};
  \node (a' synt) [right of=s synt] {A'-syntax};
  \draw[->] (lex) -- (lcs);
  \draw[->] (morph) -- (l synt);
  \draw[->] (l synt) -- (a synt);
  \draw[->] (l synt) -- (s synt);
  \draw[->] (s synt) -- (a' synt);
\end{tikzpicture}
\end{center}

Under this view, 1-syntax is the intersection of A-syntax and morphology.

One might suspect that in Hale and Keyser (1994) and Déchaîne (1996), there is an implication that 1-syntax deals with only heads. The model in (68), however, does not have such an implication. Its structure may thus consist of heads and full lexical projections (arguments: in particular, NPs). Configurations determine arguments (i.e. specifiers and complements). Adopting Chomsky's (1995) analysis of Merge, these

\textsuperscript{31} Obviously, we need a better definition because a non-primitive such as \textit{words} (two primitives: \textit{word} and -s) is a word.

\textsuperscript{32} I ignore the relation between morphology and s-syntax that is assumed in the minimalist program. I am grateful to Henry Davis (p. c.) to help me to clarify the organization of grammar in (68).
arguments are taken as maximal projections because they project no more.

2.6.2 L-syntactic Structure Formation

As Hale and Keyser (1993) make clear, l-syntax is governed by general principles of syntax. One of the principles that constrain possible syntactic representation is a general principle that builds only binary branching structure (Kayne's (1984) Unambiguous Path; Chomsky's (1995) Merge). Depending on such binary branching structures, a complement is defined as a sister of a head and a specifier is defined as a sister of a constituent that consists of a head and a complement. Thus, l-syntactic representation conforms to the following schema:

(69) \[
\begin{array}{c}
  x \\
  \text{spec} \quad x \\
  x \quad \text{compl}
\end{array}
\]

It follows that when a head is combined with another constituent C, C must be a complement, as illustrated in the following:

(70) \[
\begin{array}{c}
  x \\
  x \quad \text{complement}
\end{array}
\]

It also follows that a specifier is projected only when a head selects a complement. Thus, (69) is the only structure that introduces a specifier.

\[33\] Labels are used just for the sake of exposition.
The projection of structure is totally optional. Thus, there are three possible well-formed representations:

(71)  
   a. \[x\]  
   b. \[x\]
       \[x\] \hspace{1em} compl  
   c. \[x\]
       \[spec\]
       \[x\] \hspace{1em} compl

(71a) shows that a head may not project any structure. In (71b), a head may be combined with a constituent (which is necessarily a complement) and projected up to one branching structure. Or, as in (71c), it may project a full-fledged structure.

As one important property of l-syntax, l-syntactic structure is a basis of interpretation: there is a direct mapping between structure and interpretation. Adapting Déchaine's (1996, p. c.) principles of interpretation of the l-syntactic structure, I propose (72) as a first approximation:

(72)  
   a. The head-complement structure denotes an event.  
   b. The specifier-head-complement structure denotes a state/relation.  
   c. The head-only structure denotes an entity.

Following Hale (1986) and Hale and Keyser (1993), I assume that the

---

34 To supplement (72), the interpretation of the specifier position can be defined as follows:  
   (i) The argument in the specifier position is the subject of predication.
'relation' in (72b) is identified with central coincidence in the sense of Hale (1986). Central coincidence is a general relation that I define as follows:35

(73) Central coincidence is a relation between α and β when α and β co-exist in a certain place at a certain time.

There are two questions that are worthwhile to consider at this point. First, why is it possible for the stative configuration to be interpreted as stative despite the fact that it contains a head-complement configuration which is eventive according to (72a)? In the strictly compositional framework I am adopting, building a stative configuration could be considered to be a conversion of an event into a state by the addition of a specifier.36 A relational property is inherent in a spec-head-complement configuration, in which a head relates a specifier and a complement.

Second, and more importantly, one might wonder why the configurations in (71) are interpreted as they are; why is it not possible for the head-complement configuration to be interpreted as a state and the spec-head-complement configuration as an event? In particular, what conceptual basis do we have that allows us to assume that the head-complement configuration denotes an event?

35 Hale's (1986: 239) central coincidence is more specifically defined on the basis of the notions 'figure' and 'place/ground': the center of the figure coincides with the center of the place.
36 If this is on the right track, the stative configuration might correspond to stage-level predicates but might not to individual-level predicates (cf. Kratzer (1995)). I leave this issue open.
In the present theory, the semantic types that the 1-syntactic configurations express are entities, states and events. Principles (72b, c) are shared by Hale and Keyser. We could take (72c) as claiming that the non-projecting head denotes a 'self-contained' individual. That is, the meaning of such a head is complete or saturated without a complement or a specifier. Since I am adopting Chomsky's (1995) view of phrase structure, non-projecting heads are no distinct from maximal projections.

As for the interpretive principle (72b), the spec-head-complement structure by definition has the specifier position, which is the position for the subject of (1-syntactic) predication. What is predicated of the subject is a property. Properties are, canonically, stative. Thus, it follows that the spec-head-complement configuration is interpreted as stative.

An explanation of (72a) can be provided by a theory of s-syntactic predication along the lines of Kratzer (1993), whose syntax was briefly reviewed in Section 2.2.5. Following Davidson's (1980) idea, Kratzer postulates an event argument. Instead of specifying an external argument in a verb's argument structure, Kratzer proposes a functional category Voice, which can be semantically associated with a set of functions that assign a specific role to an external argument which is introduced in the Spec position of VoiceP. One of the functions gives an argument an agentive interpretation, like in (74):³⁷

³⁷ Kratzer (1993) proposes that non-agentive verbs are also assigned an external argument by a similar function. In this respect, I do not concur.
The variable $x$ is replaced with an argument. The symbol $e$ stands for an event role and is replaced with the event role of the verb. The replacement is carried out by what Kratzer calls Event Identification. Since it establishes a meaningful relation between an external argument and a predicate, Event Identification can be considered a specific formulation of (s-syntactic) predication.  

If we confine the event position only to the lexical entry of dynamic verbs as is in Davidson's original idea, it follows that predication is established by means of a functional projection when a predicate is eventive. The functional category that mediates predication is Voice in Kratzer's analysis, but its precise identity is not crucial here. However, it is crucial that the mediator of predication is a functional, thus an s-syntactic, category. Because of this, it follows that predication must be s-syntactic (through a functional projection) for an eventive predicate. This implies that an eventive projection requires predication only in s-syntax. Without the need of 1-syntactic predication, an event lacks an 1-syntactic specifier position.

With these motivations for the principles in (72) in mind, I continue to refer to these principles for the sake of exposition.

Déchaine claims that each of the basic configurations in (71b, c)

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38 See Higginbotham (1985) for a related idea that the lexical entry of a verb in general includes a position $E$, which is the argument place for events. Higginbotham proposes that an event role of a verb is discharged via a functional projection, IP. See also Williams (1980) for a general idea of (s-syntactic) predication.
have different realizations in English, depending on whether the complement is incorporated into the head. These are given in (75). (75a) gives rise to an unergative verb (with the complement-to-head incorporation). A general spec-head-compl configuration gives rise to a preposition when the complement remains unincorporated (75b) and to an adjective when the complement is incorporated (75c):

(75)  

a. Unergative verb  (e.g. laugh)

```
x
  x  compl
   x
```

b. Preposition  (e.g. with)

```
x
  x  compl
   spec
```

c. Adjective  (e.g. tall)

```
x
  x  compl
   spec
```

In addition to these variations, recursion of the basic components in (71b, c) is possible. L-syntax, therefore, consists of structures that arise from the interaction of the basic two components. There are at least six possibilities. The first two are (71b, c) themselves, which I call simplex configurations. The other four arise by means of embedding one of the two simplex configurations into the other simplex configuration as a complement. This recursion gives rise to the following four patterns:
Déchaine (1996) explores these possibilities in great detail. I will discuss them in later sections.

2.6.3 Constraining Recursion: Properties of 'Words'
Thus far, in the recursive analysis of l-syntax, there is nothing which can restrict the degree of embedding to just one. Logically, for example, the following multiple embedding should be possible:

(77) \[
\begin{array}{c}
\text{w} \\
\text{spec} \quad \text{w} \\
\quad \text{w} \quad \text{x} \\
\quad \text{spec} \quad \text{x} \\
\quad \text{x} \quad \text{y} \\
\quad \text{spec} \quad \text{y} \\
\quad \text{y} \quad \text{z} \\
\quad \text{spec} \quad \text{z} \\
\quad \text{z} \quad \ldots
\end{array}
\]

As far as the data that the present thesis examines are concerned, it seems that l-syntactic recursion is limited to only one degree of embedding. How is this condition accounted for?

It seems natural to relate this condition with the properties of \textit{words}. Some work has been done to define the notion of possible words (e.g. Carter (1976) and Travis (1997), among others). Travis (1997: 6) gives the following characteristics of words:

(78) \begin{enumerate}
  \item At most one 'event'
  \item At most one CAUS (causative predicate)
  \item At most two V's
\end{enumerate}
In light of this, I suggest the following as a characteristic of possible words, namely, a characteristic of 1-syntax:

(79) At most two heads

It seems unlikely that (79) is a constraint on syntax. However, since 1-syntax is part of morphology, (79) could be a constraint in morphology, which can restrict 1-syntactic structure in the model of grammar that I have proposed in (68). In this model, 1-syntax is part of morphology and thus subject to morphological conditions such as (79). Therefore, I can maintain that as far as syntactic computation is concerned, there is no difference between 1-syntax and s-syntax.

2.6.4 Mapping Principles

Hale and Keyser (1993: 95) assume that the lexical entry for *shelve*, for example, includes the full syntactic structure given in (80):

---

39 Presumably, it is not the case that (79) always holds. Dechaine (1996) proposes a structure that has two degrees of embedding for the double object/dative construction, which I do not deal with in this thesis. (79) should follow from more general principles only for cases where it must hold. Since finding out how (79) is derived is beyond the purposes of the present thesis, I assume (79) as an independent condition.
Hale and Keyser suggest that incorporation applies to underlying representations like (80) before they are inserted (or merged) into l-syntactic structure.

However, a question arises as to why we cannot assume a derived representation as part of the lexical entry. It is conceivable that when a lexical item is acquired, its lexical structural representation is ‘created’ in accordance with general principles which *include* incorporation and the relevant locality condition. Then it should be possible to include such a derived representation in a lexical entry.

This question does not arise if even an underlying representation like (80) is not included in the lexical entry. It can be derived from more basic information. I therefore suggest that the underlying representation of LRS is the output of an l-syntactic *computational* component. Lexical items are in no way pre-associated with structure. Instead, they project l-syntactic structure during the course of derivation. Thus, I take l-syntax as strictly derivational: no part of the structure is listed in the lexical entry.
How then is lexical knowledge represented? Following Borer (1993) in spirit, I propose to abstract away the structured aspects of argument structure from the lexicon into the syntax. This leaves the bare minimum that must be stipulated, namely, lexical meanings or LCSs. I elaborate this in the next section.

2.6.4.1 L-syntactic Projection Principles

I propose the principles that project 1-syntactic structure from LCS. I propose that LCS consists of (at least) the following semantic categories (cf. Jackendoff (1983, 1990) and Pustejovsky (1988, 1991)):

(81) a. Event \( (e) \)
    b. Quality \( (q) \)
    c. Relation \( (r) \)
    d. Entity \( (n) \)

Based on these types, an LCS of a head is mapped into 1-syntactic structure in the following way:

(82) L-syntactic Projection Principles
    a. \( e \) projects a head-complement configuration.
    b. \( r \) projects spec-head-complement configurations.
    c. \( n \) and \( q \) project no configuration.

The set of 1-syntactic projection principles in (82) eliminates the need for the interpretive principles in (73), repeated here as (83):

(83) a. The head-complement structure denotes an event.
b. The specifier-head-complement structure denotes a state/relation.

c. The head-only structure denotes an entity.

An apparent difference between (82) and (83) is the treatment quality heads such as red. In Déchaine's (1996) analysis, a quality head is a complement of a stative head and incorporated into the head. This analysis implies that the stative property of the quality is 1-syntactically derivative. This derivative character is made clearer in (82). See the discussion of the example (84e) below.

Let us take a look at some examples of heads with their approximate LCS's:

(84)  
   a. laugh [n LAUGH]  
   b. shelf [n SHELF]  
   c. put [x CAUSE [r y LOC z]]  
   d. on [x ON y]  
   e. red [q RED]

In (84a, b), LAUGH and SHELF are entities (assuming that LAUGH is an abstract entity). In (84c), the whole constituent headed by CAUSE is an event and what is caused is a locative relation (LOC is a predicate variable), just as the LCS of on is. (84e) indicates that tail denotes a quality RED.

In addition to these heads exemplified in (84), I employ a phonologically null head which is not associated with a specific LCS predicate. I assume that such a null head may project any kind of 1-
syntactic structure which satisfies structural conditions, namely, a head-complement or a spec-head-complement structure.\textsuperscript{40}

Let us see how the lexical heads in (84) build up 1-syntactic structure, interacting with an empty head. First, consider laugh. Since it is associated with an entity LCS, it projects no structure:

\begin{equation}
\begin{array}{c}
  x \\
  \mid \\
  \text{laugh}
\end{array}
\end{equation}

(85)

When an empty head \(x\) projects an eventive configuration and selects laugh in (85) as a complement, it gives rise to (86):

\begin{equation}
\begin{array}{c}
  x \\
  \mid \\
  \text{laugh}
\end{array}
\end{equation}

(86)

This structure corresponds to Hale and Keyser’s (1993) structure for unergative verbs:

\begin{equation}
\begin{array}{c}
  V \\
  \mid \\
  \text{laugh}
\end{array}
\end{equation}

(87)

In s-syntax, an agent argument is introduced and the derived structure is assigned to a sentence like \textit{John laughed}. I will turn to an account of agent arguments in section 2.6.8.

\textsuperscript{40} It is predicted that a null head-only structure is also possible. Although I do not explore the prediction, a null head-only structure might be related with an expletive. Cf. Tremblay (1995).
Let us next consider (84b) \textit{shelf} and see how its verb form is derived. First of all, \textit{shelf} is associated with a simple head since it denotes an entity:

\begin{equation}
(88) \quad \text{x} \\
\quad \text{shelf}
\end{equation}

Second, an empty head may take (88) as a complement and project a stative configuration:

\begin{equation}
(89) \quad \text{x} \\
\quad \text{spec} \\
\quad \text{x compl} \\
\quad \text{shelf}
\end{equation}

Third, another empty head may take (89) as a complement and project an eventive structure. It gives rise to (90):

\begin{equation}
(90) \quad \text{y} \\
\quad \text{y x} \\
\quad \text{spec} \\
\quad \text{x compl} \\
\quad \text{shelf}
\end{equation}

Following Hale and Keyser (1993), I assume that (90) is interpreted as an event that implicates a state in which a specifier argument is in some relation with a shelf. Since the state arises when the specifier of \textit{x} is affected in such a way that it becomes related with \textit{shelf}, an argument in this position corresponds to an affected argument in a traditional sense.
This structure corresponds to Hale and Keyser's (1994) structure of verbal *shelve* in (91):41

(91)  

```
(VP shelf PP)

V

NP P'

P NP

N

shelf
```

When *shelf* is adjoined to P and then to V, the verb *shelve* arises.42

41 Notice that (91) is different from (49), repeated in (i), the structure for *shelve* proposed by Hale and Keyser (1993):

(i)  

```

(V (VP (her books) V PP shelf))
```

In Hale and Keyser (1993), the specifier of PP was not considered available and a locatum argument is posited as a specifier of VP. This is revised in Hale and Keyser (1994), in which a relational category P by definition projects a specifier position as well as a complement position, as in (91). This is adopted in this thesis, in which a Relation head projects a spec-head-complement structure, due to a principle in (83b).

42 I ignore the voicing of the final consonant.
Next, consider *put* in (84c). It projects an eventive structure because the LCS of *put* is headed by an eventive CAUSE (which selects a relation):

(92)

\[
\begin{array}{c}
  \text{x} \\
  \text{x compl} \\
  \text{put}
\end{array}
\]

(84d) *on* projects a relational/stative structure. The selectional property of *put* is satisfied when *put* selects *on*. This gives rise to (93):

(93)

\[
\begin{array}{c}
  \text{x} \\
  \text{x y} \\
  \text{put spec} \\
  \text{y compl} \\
  \text{on}
\end{array}
\]

(93) is interpreted as an event that implicates a state in which an entity (denoted by a specifier argument) is on another entity (denoted by a complement). This structure corresponds to Hale and Keyser's (1994) structure of *put* in (94):

(94)

\[
\begin{array}{c}
  \text{V'} \\
  \text{V PP} \\
  \text{put NP P'} \\
  \text{P NP} \\
  \text{on}
\end{array}
\]
Since the 1-syntactic projection principles are based on LCS, the complement of *put must be a relation but cannot be a quality. This properly rules out (95):

\[
\text{(95) a. } \begin{array}{c}
\text{x} \\
\text{x} \quad \text{y} \\
\text{put spec} \quad \text{y} \\
\text{clear}_1, \quad \text{t}_i \\
\end{array}
\]

b. *John put the screen clear. (i.e. cleared the screen)

Let us now consider (84e) *red, which denotes a quality. The 1-syntactic projection principle in (82c) assigns the head-only configuration for a quality head (thus, treating it just like an entity). When it is selected by an empty stative head, it gives rise to the following structure:

\[
\text{(96)} \quad \begin{array}{c}
\text{x} \\
\text{spec} \quad \text{x} \\
\text{x} \quad \text{y} \\
\text{red} \\
\end{array}
\]

Following Déchaîne (1996), I assume that *red is incorporated into *x to license the empty head position, yielding (97):

---

43 Except for idioms such as *John put matters right.
(97) indicates that red is a quality head and derivatively occupies the position of a stative configuration. The quality head in effect becomes an l-syntactic predicate by means of an empty stative head. The structure accounts for the stativity of the quality head. It also accounts for the intransitivity of the quality head. Its derivation does not provide the quality head with any complement.

(96, 97) are consistent with Hale and Keyser's (1993) and Déchaine's (1996) treatments of adjectives that we have seen earlier. Hale and Keyser's mediator is a 'stativizer' x in (96, 97). Déchaine's proposal is that adjectives such as red are first inserted into a complement position of a stative configuration as in (96) and incorporated into a head position as in (97).

2.6.4.2 Canonical Morphosyntactic Realization of L-syntactic Heads

The preceding discussion is based on structures whose head is not given a category label. Following Déchaine (1996), I am assuming that l-syntax is category-neutral. The category-neutral model of l-syntax entails a claim that categorial realizations are not relevant to l-syntax; they are only s-syntactically relevant. The categorial status of most heads is
determined on the basis of l-syntactic configuration.\textsuperscript{44} \textsuperscript{45} When they are determined, the derivation enters s-syntax. To account for the unmarked morphosyntactic realization in English, I adopt the following principles of Canonical Morphosyntactic Realization of an l-syntactic head:\textsuperscript{46}

\begin{equation}
(98) \text{Canonical Morphosyntactic Realization}\textsuperscript{47}
\end{equation}

\begin{enumerate}
\item \(x \rightarrow V \text{ in } [x \text{ compl}]\)
\item \(x \rightarrow N \text{ in } [x]\)
\item \(x \rightarrow P \text{ in } [\text{spec } [x \text{ compl}]]\)
\item \(x \rightarrow A \text{ in } [\text{spec } [x \text{ compl}]] \text{ (namely, with incorporation)}\)
\end{enumerate}

\textsuperscript{44} Thus, such predictable information is not specified in lexical representations. For an analysis which eliminates the categorial specification in the lexical entry, see Pesetsky (1982). Cf. Grimshaw (1981) for a related discussion.

\textsuperscript{45} There are a number of exceptions in this respect. See section 2.6.4.2 and section 3.4.

\textsuperscript{46} The 'morphosyntactic realization' directly relevant here is category. I give this general name to the principles because I do not want to eliminate an implication that other morphosyntactic properties can be determined contextually.

\textsuperscript{47} To propose a comprehensive theory of morphosyntactic realization is beyond the scope of this thesis. Whereas (98a, b) may hold universally, Principle (98d) is not universal. It does not hold in Yorùbá, as will be indicated in (121b), in which the same configuration yields a verb. Also, there are languages such as Dyirbal which do not have adjectives (see Dixon (1982)). This markedness of (98d) might be related with the special reference to incorporation.

Notice that it is unlikely that the incorporation of shelf into \(x\) in (i) (=91)) does not convert \(x\) into an adjective:

\begin{equation}
(i) \quad \begin{array}{c}
y \\
\bigcup \\
\bigcup \\
\text{spec} \\
\bigcup \\
x \text{ compl} \\
\bigcup \\
\text{shelf}
\end{array}
\end{equation}

The incorporation in (i) remains to be differentiated from the other type of incorporation that does lead to adjectival realization of a head.
Principles in (98) are one-way (left to right) implications. As will made clear shortly, the opposite implication does not hold. For example, verbs are not necessarily eventive. Following Hale and Keyser (1993) and Hale (1995), I assume that there are more marked patterns of morphosyntactuc realization. I will point them out where relevant.48

As pointed out in the previous section, 1-syntax assigns the same structure to a quality head (derivatively; e.g. red) and a relational head (e.g. on). The two heads are realized differently in s-syntax due to (98c, d). The principles differentiate P and A in terms of incorporation.

Take (93), repeated as (99), for instance to see how heads are morphosyntactically realized.

(99)

First, the lower head y projects a [spec x compl] configuration, in which no incorporation applies. Therefore, due to (98b), y is realized as P. Second, the higher head x projects a [x compl] configuration; hence x is

48 Déchaine (1996) suggests the following additional principles of morphosyntactic realization:

(i) x=V in [\_ I x]
(ii) x=N in [\_ D x]

(i) means that a lexical category which is selected by I surfaces as V. Likewise, (ii) derives N when a lexical category is selected by D. These determine a morphosyntactically realized form in terms of the external property of the 1-syntactic maximal projection x. However, I do not adopt them mainly because the principles given in (98) suffice for the present purposes.
realized as V due to (98c). The output is thus (100), which is structurally the same as Hale and Keyser’s structure in (94): 49

(100) VP
     /\    \\/
    V PP put spec P'
     |     /\ compl
    P on

In morphosyntactic realization, languages may employ different rules. 50 For example, as discussed in section 2.5.2, Hale (1995: 3) shows that the morphosyntactic realization of the relational head shows great diversity. This is illustrated by the examples in (62), repeated in (101). The head is realized as P or V in English (101a) and Yoruba (101b), suffixal P or (suffixal) N in Warlpiri (101c), or suffixal P or suffixal V in Lardil (101d).

(101) a. English

The coyote has a tail.

b. Yoruba

ajá n’irù (< ni irù).

dog HAVE.tail

‘The dog has a tail.’

49 In s-syntactic structure, I use traditional phrasal notations of categories such as XP and X’. Nothing crucial hinges on this.

50 This is one of the reasons that morphosyntactic realization is not specified in l-syntax. L-syntax is a general theory of argument structure, which can hardly be language-specific.
c. Warlpiri

warnapari ø ngirnti-parnta.
dingo AUX.3 tail-WITH
'The dingo has a tail.'

d. Lardil

kantha wangalk-ur.
father boomerang-WITH
'(My) father has a boomerang.'

In the framework proposed in the previous section, a relational head is the head of the stative/relational configuration (i.e. spec-head-complement). I assume, deferring a detailed discussion until section 3.4, that have is associated with a relational LCS and thus projects a stative configuration that relates two arguments such as (102):  

(102)

To account for the verbal realization of have in English, I assume that have is inherently specified for a categorial feature. I assume that lexical entries may specify idiosyncratic formal features, among which is categorial information. Thus, the lexical entry of have looks like (103a). Compare it with the lexical entry of an unmarked relational head on,

51 As in (102) and later examples, I often use n for an entity argument to make l-syntactic structure more readily accessible.
given in (103b), whose category label is assigned by the principle (98c):

(103)  

Formal features

a. have  Cat: V
b. on  Cat: [∅]

The principles of Canonical Morphosyntactic Realization apply only to heads that lack a categorial feature.

2.6.5 Overgeneration

The l-syntactic principles discussed so far only offer a subset of possible ways of combining heads but some combinatorial options are not attested. For example, in the discussion of laugh, shelf, and red in section 2.6.2, combinatorial possibilities are not yet exhausted. An empty static head can select laugh, projecting (104a) while an empty eventive head can select shelf or red projecting (105a):

(104) a.

\[
\begin{array}{c}
\text{spec} \\
\text{x} \\
\text{n} \\
\text{laugh}
\end{array}
\]

b. *John is laugh.

(i.e. John has a property of laughness.)

(105) a.

\[
\begin{array}{c}
\text{x} \\
\text{x} \\
\text{n} \\
\text{shelf/red}
\end{array}
\]
b. *John shelved. (e.g. John made a shelf.)
c. John reddened.

(cannot be interpreted as 'John created red.')

(104) shows that the nominal heads of denominal unergative verbs like laugh, belch, cough, dance, and sleep are restricted to the head-complement structure and do not appear in a spec-head-complement structure as in (104a). (105b) is an ill-formed example of denominal location verbs like shelve, bottle, box, corral, pocket, and so on. Their nominal heads are restricted to a complex Event-over-State structure such as (91). (105c) is an example of deadjectival verbs: they cannot be unergatives. Questions arise as to why these lexical heads are so restricted.

It must be recalled that l-syntax constitutes only part of lexical information. L-syntax is a version of argument structure which mediates between lexical meaning and s-syntax. Just as argument structure has been traditionally considered a syntactically relevant part of lexical meaning, l-syntax should be understood accordingly. It is, therefore, implausible that all lexical properties are explicable in l-syntactic terms. An analogous relation has been assumed between LF and semantic representation. LF represents only part of meaning that s-syntax contributes to. LF is by no means intended to deal with a complete semantic representation.

I suggest possible approaches to these overgenerated structures. First, consider the type of overgeneration given in (104, 105b). There are two kinds of approach. The first approach is to regard the gaps such as
those exemplified in (104, 105b) as simply accidents. This is essentially the position adopted by Hale and Keyser (1993). L-syntax offers a general possibility and only some lexical heads take it. Which heads do and which do not is not strictly a linguistic question.

The second approach is to try and find deeper explanations. Answers might be provided by in-depth lexical analyses such as Pustejovsky (1995) where lexical items are specified with a rich set of information. When LCS properties inherent to heads like laugh, shelf, and red are made clear, they might explain the ill-formedness of the examples in (104, 105).

2.6.6 'Eventivization'

In this and the next sections, I demonstrate, on the basis of Déchaine (1996), that structural combinations permitted by the present 1-syntactic theory account for various constructions in English.

The present theory predicts that when an eventive head selects a complement the following three structures are theoretically possible:

(106) a. Simple Event

```
x
/   /
x  x compl
```
In the subsections that follow, I discuss each configuration in turn. I will be referring to (106a) as Simple Event, (106b) as Event over State, and (106c) as Event over Event.

2.6.6.1 Simple Event

Simple Event in (106a) transparently corresponds to Hale and Keyser's (1993) l-syntactic VP structure without a specifier projected. Following them, Simple Event is considered the structure for unergative verbs. Further manifestations of Simple Event are the light verb construction with *do* and the cognate object construction (Hale and Keyser (1993) and Déchaine (1996)):

(107) a. Petronella sang.

b. She did her new song.

c. Petronella sang her new song.
As shown in the examples (107a-c), English has three strategies for realizing Simple Event:

(108) a. the incorporation of the nominal constant into the head: (107a)

b. the light verb *do* with a nominal constant: (107b)

c. the nominal constant copied into the head: (107c)\(^{52}\)

These strategies are graphically illustrated in (109):

(109) a. 

```
    x
   /\  
  x   n
   ^   |
   |   song
```

b. 

```
    x
   /\  
  x   n
   ^   |
   |   do
   |   song
```

c. 

```
    x
   /\  
  x   n
   ^=  |
   |   sing
   |   song
     |
     copy
```

\(^{52}\) Analogies from phonology might be worth noting. Suppose there is an empty skeletal timing slot. It has to be filled due to Full Interpretation. One option is epenthesis, inserting an unmarked melody. The other option is assimilation, linking the slot with a melodic element that is already linked to another slot. In the present 1-syntactic story, the light verb strategy corresponds to epenthesis and the copy strategy corresponds to assimilation. Interestingly, this leaves no parallel phonological counterpart for incorporation. Incorporation might correspond to a complex of linking and delinking in phonology.
According to Hale and Keyser (1993) and Hale (1995), Basque exhibits the light verb strategy for unergative verbs. Citing Úwalââka (1988) and Nwáchukwu (1987), Déchaine gives Igbo as a language which has the light verb strategy and the copy strategy. (110a) gives Basque examples of the light verb strategy; (110b) gives Igbo examples of the copy strategy:

(110) a. Basque

<table>
<thead>
<tr>
<th>Basque</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>negar</td>
<td>'cry'</td>
</tr>
<tr>
<td>eztul</td>
<td>'cough'</td>
</tr>
<tr>
<td>barre</td>
<td>'laugh'</td>
</tr>
</tbody>
</table>

b. Igbo

<table>
<thead>
<tr>
<th>Igbo</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>khwá</td>
<td>a-khwá</td>
</tr>
<tr>
<td>kwá</td>
<td>u-kwá-ra</td>
</tr>
<tr>
<td>chi</td>
<td>ó-chi</td>
</tr>
</tbody>
</table>

Following Hale and Keyser, an extra argument is inserted s-syntactically for reasons of s-syntactic predication. I will return to an elaboration of this when I discuss s-syntax.

2.6.6.2 Recursive Structure: Causative

2.6.6.2.1 Event over State

The Event over State configuration is repeated in (111):
Déchaine observes that English has overt verb-forming suffixes such as -ate, -ify, -ize, and -en, all of which are causative. Déchaine identifies the configuration headed by these causative suffixes with the causative V-VP configuration headed by an empty head. Such an empty head is associated with denominal verbs like shovel and saddle, and deadjectival verbs like clear (see Hale and Keyser (1993)). The parallelism between the overt causative heads (-ate, -ify, -ize, and -en) and an empty causative head is evident in the paraphrases given for the following examples. Compare the denominal verbs in (112) and (113):

(112) Denominal verb: Zero suffix

Mary will saddle the horse =to cause horse to be with saddle

(113) Denominal verbs: -ate, -ify, and -ize

a. Mary dupli-cate-ed the specimen
   =to cause specimen to be duple.

b. Mary will class-ify the specimens.
   =to cause specimens to be in a class

c. The discussion crystal-ize-ed Mary’s ideas.
   =to cause Mary’s ideas to be crystal

The semantic parallelism between (112, 113) can be captured by assigning the denominal verbs the same Event over State structure, whether the upper head is null or overt. Compare (114a, b):

(111)
In (114), denominal verbs are uniformly associated with an Event over State structure. The only difference is whether the upper head $x$ is empty or overt. In either case, $x$ and $y$ trigger head movement.

Next, compare the deadjectival verbs in (115) and (116):

(115) Deadjectival verb: Zero suffix

They will clear the screen=to cause screen to become clear

(116) Deadjectival verbs: -en, -ify, and -ize

a. He will straight-en a spear.

=to cause spear to become straight
b. She will clar-ify her ideas.
    =to cause ideas to become clear

c. They will legal-ize marijuana.
    =to cause marijuana to become legal

The semantic parallelism between (115, 116) can be captured in the same way by assigning the deadjectival verbs the same Event over State structure, as in (117a, b):

(117) Deadjectival Verbs
2.6.6.2.2 Event over Event

The Event over Event configuration is repeated in (118):

(118)  \[
\text{Event} \\
\text{x} \\
\text{y} \\
\text{compl} \\
\text{Event}
\]

Following Hale and Keyser (1993), I assume that (118) is ruled out by a general s-syntactic condition of predication. According to the principle of Canonical Morphosyntactic Realization in (98a), repeated in (119), the two heads in (118) would be realized as V in s-syntax:

(119) \[x \rightarrow \text{V in } [x \text{ compl}]\]

While each V needs a subject of s-syntactic predication, only one subject can be s-syntactically provided. Therefore, failing to satisfy predication, (118) can never be well-formed in s-syntax.\(^{53}\)

2.6.7 Stativization

Because of the condition on recursion in (79), there can be three stative configurations, as given in the following:

\(^{53}\) Alternatively (or redundantly), as Déchaine (1996) suggests, (118) could be ruled out because one of the Vs cannot bear tense (or cannot check the V-feature of I).
I refer to (120a) as Simple State, (120b) as State over Event, and (120c) as State over State. In what follows, I examine them in turn.

2.6.7.1 Simple State

As we have seen, Hale and Keyser's (1993, 1994) stative category a cannot take a complement. Déchaine (1996) convincingly demonstrates that there are statives that consist of a head and a simplex complement, participating in the Simple State. How the head and the complement are
realized morphosyntactically varies from language to language. Déchaine observes the following patterns in English, Yorùbá and Ìgbo:

(121) a. English (i) incorporated constant (surfaces as A)
   (ii) light verb with a nominal constant

b. Yorùbá (i) incorporated constant (surfaces as V)$^{54}$
   (ii) light verb with a nominal constant

c. Ìgbo (i) light verb with a nominal constant
   (ii) head as a copy of a nominal constant

The following are lists of examples:

(122) English

a. Incorporation into a null head:
   good, bitter, bad, cruel, jealous, stubborn, lazy

b. Incorporation into an overt head:
   courageous, gutsy, moneyed

c. Light verb + a nominal constant:
   have courage, have guts, have money

(123) Yorùbá

a. Incorporation:
   darà ‘good’
   korò ‘bitter’ (food)
   burú ‘bad’

b. Light verb + a nominal constant:
   ni ewà ‘beautiful’

$^{54}$ This is where the principle (98d) does not apply: despite incorporation, the head surfaces as V, not A in Yorùbá.
nì ètanú 'bitter' (psychological)
nì ̀ikà 'cruel'

(124) Igbo

a. Light verb + a nominal constant:
dí m-má 'good'
kú i-lu 'bitter' (psychological)
dí n-jó 'ugly'

b. Head as a copy of a nominal constant:
má m-má 'beautiful'
lù i-lu 'bitter'
jó n-jó 'bad'

The following l-syntactic structures represent the three types of Simple State:

(125) a. Incorporation

```
       x
      /\  
    spec x  compl
       |    
       good
```

b. Light verb

```
       x
      /\  
    spec x  compl
       |  
       |  
   di  m-má
   'good'
```
In (125a), a complement is incorporated into a head. The structure gives rise to the examples in (122a) when the head is zero. It yields (122b) when the head is -ous, -y, or -ed and the complement is a noun. This structure also accounts for the Yorùbá examples in (123a). (123b) is the light verb configuration, which gives rise to English (122c), Yorùbá (123b) and Igbo (124a). In the third type of configuration, (125c), part of the complement noun is copied into the head. This yields the Igbo examples in (125b).  

The notion of central coincidence may apply to a stative structure that may be morphosyntactically realized as an adjective. This is the case in English. In the following example, the relation of central coincidence holds between John and tall:

(i)

\[
\begin{array}{c}
\text{x} \\
\text{n} \\
\text{John} \\
\text{tall}
\end{array}
\]

With no lexical content assigned, the head relates the two arguments in such a way that they coincide at a spatial-temporal dimension. Paraphrased in terms of possession, as the same structure usually can be, the sentence would be ‘John has tallness’, as suggested by Déchaine (1996). Since the complement denotes a quality, the resulting interpretation corresponds to that of predication. The traditional interpretation of the surface form of (i) would be ‘John is tall’.

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The following points are worth noticing:

(126) a. The structures in (125) all share the same spec-head-complement configuration.

b. The relevant examples are all stative, and
c. The heads are morphosyntactically realized in different ways, either A or V, in the above examples.

The stativity consistency pointed out in (126b) and the categorial diversity given in (126c) support the present category-neutral l-syntactic approach. In this approach, the spec-head-complement configuration gives rise to the stative interpretation but does not imply all stative heads must be A. Independently of the universal l-syntax, morphosyntactic realization is subject to language variation. Thus, this analysis allows a diversity of categorial realizations.

Notice also that the patterns of Simple State instantiation in (125) parallel the patterns of Simple Event instantiation given in (107, 108). The relevant Simple Event examples are repeated below:

(127) a. Petronella sang. (incorporation)

b. She did her new song. (do+noun)

c. Petronella sang her new song. (copy)

This parallelism between Simple State and Simple Event is captured in the present analysis, which adopts Déchaine (1996), by giving a parallel analysis to Simple Stative and Simple Event (unergatives). Both insert a lexical head (L in (128)) into the complement position of their respective configurations:
Further examples of English denominal adjectives are given in the following:

(129) Denominal adjectives

a. That remark is devil-ish.
   That remark is woman-ly.
   That gesture is hero-ic.
   This shampoo is natur-al.
   That idea is revolution-ary.
   The water is ice-y.

b. That remark -ish
devil
remark -ly
woman
gesture -ic
hero
shampoo -al
nature
idea -ary
revolution
water -y
ice
2.6.7.2 Stative Recursion and the Specifier Binding Condition

2.6.7.2.1 State over Event

The State over Event configuration is repeated in (130):

(130)
```
  x
spec
  x  y
  
  y
  
  y
compl
```

The Event component of (130) can be associated with the following examples:

(131) a. She read this book.
    b. The coup surprised Lucie.

Without the agent argument which is introduced in s-syntax, the VP in (131a) for example is associated with the following structure:

(132)
```
  x
  x  n
  
  read  book
```

When (132) is selected as a complement of a stative head, it gives rise to (133):
Déchaine (1996) proposes that this type of structure is constrained by the following principle, which I call the Specifier Binding Condition:

\[(134)\text{ The Specifier Binding Condition}\]

In a recursive structure, the specifier of the upper lexical head binds the argument of the lower head.

I assume for concreteness that the Specifier Binding Condition applies whenever the relevant configuration arises. The formulation of the condition in (134) makes reference to ‘the upper head’ and ‘the lower head’. This implies that (134) only applies to complex/recursive configurations.\(^{56}\)

\(^{56}\) Because of this, it is possible to have a non-binding specifier in a stative structure when its complement is simplex. Consider the example we examined earlier. In the lower stative structure of (i), the specifier DP does not bind the complement DP, which is l-syntactically a simplex structure projected by an entity:

(i) John put the books on the shelf.

(ii)  

\[
\begin{array}{c}
 x \\
 \downarrow \text{put} \\
 x \\
 \downarrow \\
 \text{books}  \\
 \text{on} \\
 \text{shelf} \\
 y \\
 \downarrow \\
 NP \\
 y \\
 \downarrow \\
 NP \\
 \end{array}
\]

A question arises as to why the Specifier Binding Condition is the way it is. I leave the question open for further research.
Departing from Déchaine, I propose that the Specifier Binding Condition triggers movement. Thus, in (133), the complement book is raised into the specifier position, leaving a trace behind. The derived representation satisfies the Specifier Binding Condition, as observed in (135):  

\[
\begin{array}{c}
\text{x} \\
\text{spec} \\
\text{x} \\
\text{book} \\
\text{y} \\
\text{y} \\
\text{read} \\
\text{t}
\end{array}
\]

As an example utilizing the upper head x in (135), Déchaine (1996: 7) gives affixes that convert a verb into an adjective. Examples using -able and -en are illustrated in the following:

(136) a. This book is readable.
b. Lucie is surprised.

These examples are associated with the l-syntactic structure (137a), to which movement applies to meet the Specifier Binding Condition, giving rise to (137b):

In the present analysis of movement, the upper relational head projects an empty specifier and it is filled in the course of derivation. Notice that this is consistent with the l-syntactic projection principle of a relational head (82b). As long as the position is lexically filled, the Principle of Full Interpretation is also met. Such an 'underlyingly' empty specifier is not possible when a complement is simplex because the Specifier Binding Condition does not apply to simplex structures and therefore the empty specifier cannot be filled.
In (137), the higher structure associated with $x$ yields a stativization component while the embedded $y$ structure yields an eventive component. Thus, the interpretations of (136) can be stated as follows:

(138) a. (136a): The book has the attribute of being able to be read.\(^{58}\)

b. (136b): Lucie has the attribute of being surprised.

Binding of a trace in (137b) is reminiscent of binding at the level of argument structure (or lexical binding) in the sense of Grimshaw (1990). Grimshaw (1990: 154) proposes, for example, that French reflexive verbs have the external argument bound to the internal argument, as in the following:

\(^{58}\) Henry Davis (p. c.) points out that the meaning of -able is ‘operator-like’. If the meaning of -able is only derivable by an operator, which is licensed in an A'-position, it cannot be l-syntactic=A-syntactic. I leave this question open.
(139)  

a.  
tuer (x (y)) --> se tuer (x=y (y))

b.  
Le frère du juge se tue.

'The brother of the judge kills himself.'

The bound argument \( x \) in (139a) has no corresponding DP argument in (139b). Lexical binding is, thus, one way of formulating argument suppression.

However, lexical binding in (139a) gives rise to a reflexive interpretation. It is not the interpretation for the examples in (136). For example, as Hamida Demirdache (p. c.) points out, (136a) does not mean that the book has the attribute of being able to read itself. Instead, it has a 'passive' meaning: 'the book has the attribute of being able to be read'.

My version of 1-syntactic binding accounts for the proper interpretations of (136) by deriving binding from movement. Their interpretations are 'passive' because they are subject to the movement of an (internal) argument just like verbal passives.

It might appear that the movement that derives (137b) moves a head \( z \) \( (\text{Lucie/book}) \) crossing over two heads \( x \) \( (-en/-able) \) and \( y \) \( (\text{surprise/read}) \). However, I have assumed (section 2.6.1) that arguments are maximal lexical projections that are merged with an unsaturated structure. Therefore, the movement of arguments such as Lucie and book in (137) may skip heads.
2.6.7.2.2 Empty Arguments in L-syntax

While the above movement analysis accounts for the 'passive' reading in the State-over-Event configuration, it raises a question of what kind of empty category the l-syntactic movement of an argument leaves. Since l-syntax is syntax and l-syntactic arguments are maximal projections, the null hypothesis is that all the types of empty categories that are available in s-syntax are also available in l-syntax. That is, an empty category in l-syntax may be an anaphor, pro, a variable, and PRO (depending on the features [+/-anaphoric] and [+/-pronominal], as in Chomsky (1982)).

However, a variable is not an option for an independent reason. L-syntax is argument structure in the traditional sense. Therefore, l-syntactic structure lacks A'-position and cannot license an operator. Without an operator, a variable cannot be licensed. Also, it seems that PRO cannot be licensed in l-syntax because, following Chomsky and Lasnik (1995), its licensing depends on I (or the null Case feature), which is a functional category and is not available in l-syntax. Thus, these considerations leave an anaphor and pro in l-syntax. Just as in s-syntax, the trace of the argument movement must be identified as an anaphor.

It follows then that if there is any empty argument which is not created by movement, it must be pro. If pro is in principle possible in l-syntax, the next question is why the complement of read in, say, (136) is not pro but a anaphor (trace). That is, why not assume the following structure which is not derived by movement, in place of (136)?:
The answer seems to lie in Binding Theory. I propose, following a suggestion by Henry Davis (p. c.), that l-syntactic structure is subject to Binding Theory, maintaining that the level where Binding Theory applies is LF. This proposal is indeed the null hypothesis because l-syntactic structure is syntactic and the structure remains as it is (i.e. not stripped away) in s-syntax including LF. The crucial principles here are Principles A and B. Setting aside complexities that have led to revisions of these principles (see, e.g. Chomsky (1981, 1986a) for discussion), I adopt the following versions (Chomsky (1981)) for the present purposes:

(141) A: An anaphor must be bound in a local domain D.
     B: A pronominal must be free in a local domain D.

I define the local domain D as follows:

(142) The local domain D for α is a minimal projection that contains α and a subject, α= an anaphor or a pronominal.

Now let us consider (140). According to (142), the local domain for pro in (140) is the x projection because that is the minimal projection that contains both pro and a subject (book). Pro is bound in this local domain. Therefore, Principle B properly rules out (140).
In contrast, consider (135), repeated below, the structure which has a trace=an anaphor in the complement of $y$:

(143)

```
     x
    / \   
   spec x   y
   /      
  book, y  n
      /   
     read t, t
```

In (143), the local domain for this anaphor is the $x$ projection because it contains the anaphor ($t$) and a subject (book). In this local domain, the anaphor is bound, thus satisfying Principle A. Therefore, it follows from Principles A and B that the empty category in (143) must be an anaphor.

I have shown that an empty category can be pro or an anaphor (=a trace) in 1-syntax in principle and further that the empty category in (135=143) must be an anaphor for binding-theoretic reasons.

### 2.6.7.2.3 State over State

The State over State configuration is repeated in (144):

(144)

```
     x
    / \    
   spec x   y
   /      
  spec y   compl 
        /    
       State State
```
As an example of State over State, Déchaine gives deadjectival adjectives headed by -ish. The examples and their structure are given in (145):

(145) De-adjectival adjectives: A-ish

a. a blue-ish tint That dye is blue-ish.
   an old-ish house That house is old-ish.

b. 

In an analogous way to the cases of -able/-en, the Specifier Binding Condition triggers movement of the specifier argument (dye) of the lower head y. Due to this condition, the addition of the specifier of x to an 1-syntactic structure cannot lead to a genuinely extra argument; the specifier of a lexical head always binds another argument. This relation derives the identity between the subjects of blue and -ish.

2.6.8 Agent/Causer Argument and v

Hale and Keyser (1993) suggest that an agent/causer argument is not available in 1-syntax but inserted in s-syntax. S-syntactic insertion is the only possibility for introducing this argument in the present theoretical architecture. This is because two possible 1-syntactic
positions for an argument, i.e. a specifier position and a complement position, are associated with non-agent/causer interpretations. When a specifier position is projected, the structure must be stative by definition. Thus, an l-syntactic specifier can never host an agent/causer because the latter implies an event. For an analogous reason, the complement of the stative structure cannot be an agent/causer. The last possibility is the complement position of an eventive structure. It is, however, again inappropriate: the eventive complement corresponds to the traditional internal argument. It thus cannot give rise to the agent/causer interpretation. Therefore, the agent/causer argument must be expressed, if necessary, outside l-syntax.

Hale and Keyser are vague, however, as to how this argument is inserted. The s-syntactic option to introduce an agent/causer argument is in terms of a functional category. For this category, I employ Chomsky's (1995) category \(v\), into whose Spec the agent/causer is inserted: \(^{59}\)

\(^{59}\) Larson's (1988) VP-shell could be considered a precursor to the subsequent series of analyses which postulate an additional projection that hosts an agent argument in its Spec position. In Larson's analysis, however, the agent argument is not necessarily projected as a Spec of the higher VP in VP-shell. If a verb projects only two arguments and if there is no adjunct projected, only one VP is projected and an agent argument may be postulated in its Specifier position.

For a head analogous to Chomsky's \(v\), see Holmberg and Platzack (1995), who independently propose a similar kind of functional category \textit{Act}. See also Murasugi (1992) and Kratzer (1993) for the functional category \textit{Voice}, which plays a similar role.
Following Hale and Keyser (1993), I take VP to be a predicate in s-syntax. In the present theory of l-syntax, however, the eventive VP lacks a subject. The subject is supplied by $v$ in order to satisfy s-syntactic predication.

In this analysis, $vP$ is not projected if a stative predicate is realized as VP, because the stative projection has its own subject, thus satisfying predication. So, for example, *have* heads VP but it has its own subject: $[vP \text{ John } [have \text{ a dog}]]$. It follows therefore that no agent/causer argument is introduced for stative/relational verbs like *have*.

2.6.9 L-syntax and S-syntax

Section 2.6 has offered a framework of l-syntax, the syntax of argument structure, on the basis of Hale and Keyser (1993, 1994) and Déchaine (1996). A significant claim is that l-syntax replaces principles in the traditional argument structure with more general syntactic principles. L-syntax is subject to general syntactic principles such as movement and constraints on movement. I have made it clear that l-syntax is a derivational component just like s-syntax.

L-syntax, however, is a component distinct from s-syntax. I have demonstrated that there are at least three differences between l-syntax and s-syntax. First, l-syntactic structure reflects some semantic
properties of heads (e.g. eventive and stative). Traditional s-syntactic structure has no such semantic import. Second, l-syntax deals with category-neutral heads. Categories are assigned in unmarked cases by the principles of Canonical Morphosyntactic Realization after l-syntactic derivation. Third, l-syntax is subject to principles that do not apply in s-syntax, for example, the constraint on recursion, which is presumably related to the internal structure of words (morphology). These strongly suggests that l-syntax is a component separate from s-syntax.\footnote{I have also pointed out that l-syntactic operations are not entirely productive, unlike s-syntactic operations. For example, eventivization of \textit{laugh} is fine but its stativization is not. However, the lack of entire productivity should be reduced to lexical idiosyncracies stipulated in LCS.}

One more important difference that is related to the distinction between l-syntax and s-syntax is the difference between A-syntax and A'-syntax. As I have pointed out earlier, l-syntax is A-syntax because it is a syntactic version of argument structure which consists only of A-positions. In contrast, s-syntax consists of A-syntax and A'-syntax. The structure built in s-syntax may have A'-positions that can license operators. A canonical A'-position is the specifier of the functional category C.

I have adopted a working hypothesis that l-syntax is strictly derivational. The theory proposed here has made it clear how l-syntactic derivation proceeds, including how l-syntactic structures are built and interpreted. It has been also made clear that it is wrong to expect l-syntax to explain all lexical properties.
When the principles of Canonical Morphosyntactic Realization apply to 1-syntactic structure, the 1-syntactic derivation moves on to the s-syntactic derivation. A general picture of the derivation that emerges from the discussion can be depicted as follows:

(147) LCS (with non-predictable semantic properties)
      ↓
  Lexical entries (with non-predictable formal features)
      ↓
 L-syntax
      ↓
 S-syntax  Binding Theory (141)
    ↓
   Princiles of Canonical Morphosyntactic Realization (98)
    ↓
 Specifier Binding Condition (134)
    ↓
 Condition on recursion (79)
    ↓
 L-syntactic projection principles (82)
    ↓
 Structure-building principle
    ↓
 Lexical entries (with non-predictable formal features)
    ↓
 LCS (with non-predictable semantic properties)

2.7 Theory of L-functors

In this section, I move on to s-syntax. In particular, I propose a theory which makes it possible for certain lexical items to be inserted not only in 1-syntax but also in s-syntax. The theory I propose gives a principled account of a certain type of usage of lexical items, the usage that is not genuinely 1-syntactic but functional.

2.7.1 Questions

Consider (148). In (148a), have receives a possessive interpretation whereas in (148b), the same verb functions more like a functional head without an obvious specific meaning attributable to have:
Have in (148b) cannot be equated with make because the example can receive not only a causative interpretation but also an experiential interpretation in which John is affected by an event of his students’ walking out of class. To accommodate this ambiguity, Ritter and Rosen consider have in (148b) to be a kind of functional element that connects John and the complement his students walk out of class but is not inherently associated with specific meanings like causation or experience.

Questions that arise about have are:

(149) a. How are two have's in (148) related?
   b. Why can have have lexical and functional properties?

The second question leads to further questions:

(150) a. Are there any other lexical items that have similar lexical/functional properties?
   b. If there are, which ones?
   c. What is it that characterizes these lexical/functional items?

The theory of l-functors to be proposed in this section offers an answer to these questions. As will become clear, the theory crucially hinges on the configurational properties of l-syntax that I have outlined in the previous section.
2.7.2 The Functionalization Principle

English has a limited set of lexical items which lack inherent semantic content except being specified for an event or a state. In the present 1-syntactic framework, these lexical items can be represented as an 1-syntactic head that lacks any inherent semantic feature specification but projects an 1-syntactic structure. Projected 1-syntactic structure represents whether a head is eventive or stative. I refer to these lexical items as purely structural. The definition of 'pure structurality' is given in the following:

(151) Pure Structurality:
An 1-syntactic head is purely structural iff it has no (non-structural) semantic feature specification.

Purely structural 1-syntactic heads include adjective-forming -en and 'possessive' have. In this section, I propose a theory that permits these purely structural lexical items to head a functional category under certain constraints. I refer to these lexical and functional heads as lexical functors or l-functors.

Let me start by comparing two adjective-forming suffixes: -en and -able, as illustrated in the following examples that we have seen earlier:

(152) a. This book is readable.
    b. Lucie is surprised.

I have adopted Déchaine's analysis of these suffixes. I assume them to be inherently relational in their LCS (153a), relating an entity argument
with an eventive complement. Thus, they are assigned a derived State-
over-Event configuration in (153b):

(153) a. -able/-en: \([r, [n, x] \text{ABLE}/\text{EN} [c, y]]\)

b. 

```
  x
 /\  /
/ \ / \\
\ x \ y
```

\[-able \]
\[-en \ read surprise\]

Though -en and -able are associated with the same l-syntactic
configuration, -en seems to be able to head a functional projection and
give rise to verbal passive while -able does not. There is a crucial
semantic difference between the two suffixes. On the one hand, -en is
stative but lacks any more inherent meaning; that is, -en is purely
structural. Since -en is a complement-taking stative, the structurally
represented meaning must be a relation (central coincidence). Thus, I
tentatively reformulate the LCS of -en as follows:

(154) -en; \([r, [n, x] \text{CC} [c, y]]\) (CC=predicate of central coincidence)

On the other hand, -able is inherently associated with a
structurally represented meaning (stative configuration) and some non-
structural meaning, which can be represented as ‘one is able to V’ or,
simply, ABLE. Therefore, the semantic representation of -able consists of
stativity (the information identical to -en) plus ABLE. The difference can
be observed in the following triplet:
(155) a. These sheets of paper are bound.
   b. These sheets of paper can be bound.
   c. These sheets of paper are bindable.

The predicative part in (155b) consists of bound (bind-en) and the capability modal auxiliary can. Its semantic equivalence to bindable in (155c) indicates that bindable can be decomposed into -en and ABLE.

I claim that the extra semantic component of -able, ABLE, blocks it from being inserted s-syntactically. I formulate this idea as the following principle:

(156) The Functionalization Principle

Purely structural 1-syntactic heads, and only these, can be inserted as an l-functor into s-syntactic structure.

Because the adjective-forming -able is inherently specified for its non-structural meaning, ABLE, it is not purely structural. Therefore, due to the Functionalization Principle, -able cannot be an l-functor. However, the adjective-forming suffix -en is a purely structural 1-syntactic head. Therefore, the Functionalization Principle permits -en to be s-syntactically inserted as an l-functor.

Next, let us consider have. The semantic lightness of the verb have has been noted often in the literature. Cowper (1989), Noonan (1992), and Ritter and Rosen (1993) claim the following.\footnote{Ritter and Rosen (1993: 534) cite Abney (1987), who says that 'words with no independent semantic content belong to the set of functional categories.' They continue that 'by this criterion have is functional. But have is an argument-taking verb, and therefore appears to be a lexical element with functional properties.' They call have a functor predicate.}
(157) ‘Possessive’ have:
   a. has no semantic content.
   b. is an argument-taking verb.

These properties of have can be naturally expressed in the present l-syntactic framework in a more appropriate way: have is a head that lacks any non-structural semantic feature but projects a stative/relational (spec-head-compl) configuration. Thus, the LCS of have is (158a) and the structure that have projects is (158b):

(158) a. have: \[ [x, y] \]

b. \[
\begin{array}{c}
\text{spec} \\
\text{have}
\end{array}
\]
\[
\begin{array}{c}
x \\
\text{spec}
\end{array} \quad \begin{array}{c}
y \\
\text{spec}
\end{array}
\]

The head’s lack of any non-configurational semantic features almost corresponds to (157a) but not entirely. I do not agree that have has no semantic content. I am claiming that have is semantically specified for a relation but no further semantic feature: namely, have is purely structural, according to the definition in (151). The relational property of have indeed accounts for (157b). Since the configuration that a relational head projects hosts a specifier and a complement as in (158b), it derives (157b). Being purely structural, have can be projected as an l-functor in s-syntax due to the Functionalization Principle.

Pure structurality characterizes light heads. Purely structural l-syntactic heads need not be verbs; they can be any l-syntactic head. Thus, it is possible to make a cross-categorial generalization: the suffix -
en and the verb have are light heads. And the Functionalization Principle permits only light heads to be \( 1 \)-functors. The theory of \( 1 \)-functors, therefore, answers some of the remaining questions in (149, 150), which are restated as follows:

(159) a. Why can -en and have be either lexical or functional?
   b. What is the property shared by -en and have?

The lexical/functional property of -en and have arises because they can be inserted at two levels: \( 1 \)-syntax and s-syntax. Such two-level insertion is possible for -en and have because they are purely structural \( 1 \)-syntactic heads (a. k. a. light heads) which can be s-syntactically inserted as an \( 1 \)-functor due to the Functionalization Principle.\(^{62}\)

The remaining and more specific question is (160):

(160) How are the two have's below related?
   a. John has a new cabinet.
   b. John has his students walk out of class.

An answer will be offered in Chapter 3, where specific properties of have are discussed in more detail. In that chapter, details of -en are also examined.

A general theoretical picture of \( 1 \)-functors is that UG has an inventory of possible functional categories whereas the Functionalization Principle permits the enrichment of the vocabulary of functional

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\(^{62}\) While the present theory makes a novel generalization (unification of -en and have), there is a clear difference between -en and have: -en is an affix and have is a non-affixal full verb. The fact that -en is an affix does not seem to be an accident, but it is not accounted for by the present theory.
categories in language-specific ways.

2.7.3 L-functor and the Condition of Inclusiveness

When inserted in s-syntax due to the Functionalization Principle, an l-functor is constrained in the following way. To put the constraint in general terms, an l-functor's original l-syntactic (i.e. lexical) property must be satisfied in s-syntax. A purely structural l-syntactic head L is only specified for some semantic/configurational property. Therefore, when L becomes an l-functor, L's property is satisfied in s-syntax if the l-functor s-syntactically projects the same configuration as L would project (I will refer to L, that is, an l-syntactic head from which an l-functor is derived, as a base of the l-functor). Due to this requirement, for example, if an l-syntactic head Ls projects a spec-head-complement projection in l-syntax, an l-functor derived from Ls projects a spec-head-complement configuration in s-syntax. This requirement is derived from a general principle that assures lexical properties must be satisfied in s-syntax. For concreteness, I adopt Chomsky's (1995: 228) condition of inclusiveness, which I formulate as follows:

(161) The Condition of Inclusiveness

Any syntactic structure is constituted of elements required by the lexical items.
2.7.4 General Consequences

I point out the following four general consequences of the theory of 1-functors presented thus far. First, there is an implication in the theory of 1-functors that I take advantage of: in addition to -en and have, the definition of 1-functors permits a phonologically empty head in 1-syntax to become an 1-functor. I will claim in Chapters 3 and 4 that Hindi perfect constructions and Japanese experiential transitive constructions depend on an empty 1-functor which corresponds to an overt 1-functor have in English.

To consider the second and third consequences, compare the present theory with Parallel Morphology (Borer (1988) and Borer and Wexler (1987); see also Baker (1988) and Spencer (1991) for similar analyses). The present theory overlaps in the range of data with Parallel Morphology. As briefly reviewed in section 2.3, Parallel Morphology permits the affix -en to be inserted into s-syntax. Our theory of 1-functors reaches the same conclusion but in a more principled way. Parallel Morphology is not clear about what morpheme can be inserted in s-syntax, but our theory constrains possible s-syntactic morphemes only to those that are purely structural in the sense given in (151). This is the second consequence.

As the third consequence, our theory makes a further prediction which is beyond the scope of Parallel Morphology: what can be inserted in s-syntax is not only affixes but also a full lexical item, given its purely
structural property. I will demonstrate that this prediction is borne out by the light verb *have*.

The fourth consequence concerns the hierarchical relation between genuinely functional categories and l-functors. In the present analysis, the availability of l-functors hinges on the language-specific availability of purely structural lexical items. For example, passives are expressed in English by depending on the lexical property of the adjective-forming suffix *-en*. By contrast, in Hebrew for instance, verbal passive can be expressed by special morphology (see section 3.2). Presumably, the passive morpheme is a pure functional category in Hebrew.

This crosslinguistic variation suggests that UG is not specific for how to express passives. A language may employ an l-functor whereas some other language may employ a functional head that is specific to verbal passive.

It is unlikely, however, that an l-functor can head *any* functional projection. There seems to be a constraint on which functional category can be an l-functor. Descriptively put, during an s-syntactic structure-building derivation of a clause, an l-functor cannot be introduced (merged) after a genuinely functional category. Thus, no l-functor can be permitted after a purely functional feature such as [+Q] (a feature associated with C) is inserted. This could be formulated as the following:

(162) *[^Lp L [fp F]], where L is an l-functor and F is a genuinely functional category.

This hierarchical relation partly follows from the present architecture of grammar in which A-syntax is postulated prior to A-
syntax. Notice that the distinction between an l-functor and a genuinely functional head almost corresponds to that between an A-projection (its Spec is an A-position) and A'-projection (its Spec is an A'-position). \textsuperscript{63} Since an l-functor is associated with some lexical feature by definition, it projects an A-projection. Thus, l-functor projections must be introduced (merged) prior to a canonical A'-projection, C. \textsuperscript{64} \textsuperscript{65}

Based on the theory laid out in section 2.7 so far, the s-syntactic component has been elaborated as in (163):

\textsuperscript{63} The correspondence does not entirely hold because I and v are A-projections.

\textsuperscript{64} There is a prediction of (162) that does not follow from A-/A'-distinction but is worth investigating. I have pointed out that the passive marker (-en) and the perfect auxiliary (have) can be expressed by a purely functional head or an l-functor. Suppose that the perfect projection is universally postulated in a higher position than the passive projection. Suppose further that a language employs an l-functor for the perfect head. Then, because the passive marker is lower than the perfect l-functor, (162) predicts that the passive marker cannot be a purely functional category in this language. Examination of the prediction is necessary.

\textsuperscript{65} Analyses of structural relations among functional categories are often based on some selectional stipulation. For example, it is widely assumed that C selects I and that I selects V. Grimshaw (1991) proposes an alternative account of the C-I-V hierarchy in terms of extended projections and feature specifications. Grimshaw assigns these categories the following features:

$$
\begin{align*}
(\text{i}) & \quad C & [+V -N] & [F2] \\
& \quad I & [+V -N] & [F1] \\
& \quad V & [+V -N] & [F0]
\end{align*}
$$

The categorial feature bundles in (i) specify that C, I, and V are all verbal categories. Grimshaw posits the functional feature \{F\}, and assigns \{F0\} to lexical categories, \{F1\} to the functional categories that select \{F0\} categories, and \{F2\} to the functional categories that select \{F1\}. From these, it follows that C selects IP, that IP in turn selects VP, and that C and I are extended projections of V. Although this analysis eliminates the selectional property of C and I, it stipulates the formal feature \{F\} that does not seem to be independently motivated.
2.8 Additional Basic Assumptions

2.8.1 *Be*

The verb *be* is often considered a paradigmatic example of the light verb. However, I take *be* to be analyzed differently from *have*. I assume that *be* is a pure tense-holder projected to save a representation that lacks a head that can bear a tense. Therefore, *be* is semantically empty whereas *have* is semantically light.

Given the theory laid out in section 2.6, a sentence such as (164a) is assigned the structure (164b):

(164) a. The screen is clear.

---

66 The same analysis has been proposed by Déchaine (1993, 1995).
To license a null head, *clear* is raised to the head position:

(165) 

In the present model of l-syntax, the head *x* or *clear* has no morphosyntactic label assigned. The morphosyntax becomes significant in s-syntax, where a number of language-specific principles come into play. The morphosyntactic realization in English is canonically subject to the principles of Canonical Morphosyntactic Realization. The principle that is relevant to (165) is repeated in (166):

(166) $x \rightarrow A$ in $[\text{spec } [x \text{ compl}]]$ (namely, with incorporation)

Due to (166), the head of the stative configuration with the complement-to-head incorporation surfaces morphosyntactically as an adjective in English. Thus, (165) surfaces as (167) in s-syntax:
The s-syntactic derivation introduces tense or I. It must be 'supported' or borne by an overt verbal element. (167), however, has no verb. In English, it is only verbs that can bear tense. Thus, English s-syntax cannot directly fit (168) in.

As a last resort, a minimal repair strategy is invoked to overcome this conflict: a purely s-syntactic contentless verbal category is inserted to a position where it can bear tense (cf. Pollock (1989)). I identify it as $v$. It is the most natural choice in the present theory for an s-syntactic verbal category which lacks quantificational import. The category $v$ must be inserted to the position that is c-commanded by I in order for $v$ to successfully move to I. The only coherent and minimal assumption is that the position is the complement of I.

The next question is how $v$ is structurally linked with the AP in (167). It is obvious why the AP cannot be the Specifier of $v$: the Specifier is projected only when there is a complement. If AP is the Spec of $vP$, there is no conceivable complement in the present example. The minimal assumption is, therefore, that $v$ selects AP as a complement. If AP is the
complement of \( v \), there is no Specifier projected from \( v \) because nothing requires it.\(^{67}\) We thus reach the following structure:

\[
(168) \quad \begin{array}{c}
\text{I} \\
\text{I} \\
\text{vP} \\
v \\
\text{AP}
\end{array}
\]

This \( v \) surfaces as \textit{be}. Its sole function is to check off the verbal feature of the tense. As I have just suggested, \textit{be} in effect provides a way to give an s-syntactically legitimate form to the stative meaning in English.

The full structure that we have is (169):

\[
(169) \quad \begin{array}{c}
\text{I} \\
\text{I} \\
vP \\
v \\
\text{AP} \\
\text{is} \\
\text{DP} \\
\text{the screen} \\
\text{A} \\
\text{Z} \\
clear_{1} \\
t_{1}
\end{array}
\]

\(^{67}\) The analysis thus amounts to the claim that \( v \) without Spec is \textit{be} while \( v \) with Spec gives rise to the causative interpretation. A similar analysis is proposed by Harley (1995), who claims that an Event Phrase may be headed by either BE or CAUSE. BE lacks a Specifier position but CAUSE projects one. Notable differences between Harley's Event head and our \( v \) are (i) BE/CAUSE is meaningful whereas \( v \) is semantically vacuous in itself (its semantic contribution is contextual) and (ii) the Event head is l-syntactic whereas \( v \) is s-syntactic. Harley's contention that the Event head is l-syntactic seems to be motivated by the observation that its semantic contribution is unlike regular functional categories.

Harley can assume that the Event head (= \( v \)) is l-syntactic for two reasons. First, Harley relies on Agr for Case checking. Second, Harley postulates a pure functional category Agr\(_{o}\) in l-syntax. Since our theory rejects both options, \( v \) is motivated as an s-syntactic category that mediates (accusative) Case checking.
To check the features, DP is raised to the Spec of IP and \( v \) to I. This gives rise to the following LF representation in (170), which transparently corresponds to the PF of the example *The screen is clear*:

(170)

2.8.2 Feature Checking

As one of the central systems of s-syntax, I adopt a theory of feature checking in the sense of Chomsky (1995). In this theory, heads are drawn from the lexicon with features such as Case features and \( \phi \)-features. These features must be checked, through the Spec-head relation, against the corresponding features either by adjoining a head (or a feature) to a functional head and/or by raising an argument DP to a specifier position of a functional projection. For example, the features of C (e.g. \( wh \)-feature) and of I (nominative Case feature) are checked against the features of DPs which are raised to the Spec's of CP/IP.
Checked features are eliminated. If there is no feature remaining, a derivation converges; otherwise it crashes.

Since 1-functors are functional categories by definition, they are also specified for a feature which needs to be eliminated for a derivation to converge.

I follow Chomsky (1995: Ch. 4) in deriving X-bar-theoretic effects from his minimalist assumptions of phrase structure. However, since this issue is not directly relevant to the present concern, I generally employ a traditional X-bar-theoretic phrase structure. For example, I use XP notation, and I sometimes project an XP that has an empty specifier.

Chomsky's minimalist phrase structure theory permits multiple-Spec constructions, as illustrated in the following:

(171)   
   \[ \begin{array}{c} XP \\
     \downarrow \\
     \text{Spec}_1 \ X' \\
     \downarrow \\
     \text{Spec}_2 \ X' \\
     \downarrow \\
     X \text{ Complement} \end{array} \]

The multiple-Spec construction makes it possible to eliminate Agr, which is not motivated by conceptual necessity. Under the multiple-Spec hypothesis, \( v \) can host an agentive/causative argument and mediate accusative Case checking in terms of its Spec positions.
In (172), the landing site of DP \( j \) is the outer Spec of \( v \), for which I assume the (agentive/causative) \( v \)-VP configuration does not induce an agent/causer role. In general, an outer Spec has no semantic relation to the head (a suggestion by Michael Rochemont (p. c.)). See Chomsky (1995: ch. 4) for discussion.

The theory of feature checking is relevant in section 3.2 (where some of the analyses which I review employ a feature checking system), section 3.5.1.1 (where I discuss movement of a verb’s argument in, e.g. *John had his wallet stolen* \( t_j \)), and section 3.5.2.3 (where I discuss Case checking by *have* in, e.g. *Lucie advised the prime minister*). Furthermore, I extend the theory of feature checking to the Case determined by an \( l \)-functor in Chapter 4.

### 2.8.3 Word Order

In this thesis, I do not go into recent issues of the relation between word order and syntactic structure (see Kayne (1994) and Chomsky (1995: Ch. 4)). Given the semantic nature of \( l \)-syntax, \( l \)-syntactic structure is assumed to be universally invariant. For concreteness, I
assume that constituent order in l-syntax is specifier-head-complement. To account for surface word order variations, I assume, for concreteness, that a head parameter is fixed at the outset of s-syntax.

2.9 Architecture of Syntax

The present theories of l-syntax and l-functors can be summarized as the following, which is a revised version of (164) (italics indicate additions):

(173)

\[ \text{LCS (with non-predictable semantic properties)} \]
\[ \text{Lexical entries (with non-predictable formal features)} \]
\[ \text{Structure-building principle} \]
\[ \text{L-syntactic projection principles (82)} \]
\[ \text{Condition on recursion (79)} \]
\[ \text{Specifier Binding Condition (134)} \]
\[ \text{Movement} \]
\[ \text{Principles of Canonical Morphosyntactic Realization (98)} \]
\[ \text{Head Parameter} \]
\[ \text{Binding Theory (141)} \]
\[ \text{Functionalization Principle (156)} \]
\[ \text{Condition of Inclusiveness (161)} \]
\[ \text{Feature checking (i.e. Move or Attract F)} \]
CHAPTER 3
PARADIGMATIC LIGHT HEADS: -EN AND HAVE

3.1 Introduction

Compare the following examples:

(1) a. Adjectival Passive: John is very scared.
   b. Verbal Passive: John was scared by Mary.

The first and most evident relation among them is the passive morpheme -en. It is well-known that the same passive morpheme is used for this range of constructions in not only English but a number of languages. It has often been suspected that the appearance of the same morpheme in these constructions is not an accident, though there are languages that employ different morphemes for the constructions in (1).

I claim that the above suspicion is theoretically sound. Given the theory of 1-functors, it is possible to give a principled account of the relation between (1a, b). This chapter shows that -en in the verbal passive is an 1-functor derived from an adjective-forming suffix -en. I first discuss the adjective-forming -en. Following and elaborating on Déchaine (1996), I propose an 1-syntactic analysis of this morpheme, which gives rise to adjectival passives like (1a). I also propose that -en is purely structural in the sense defined in Chapter 2. The theory of 1-functors predicts, then, that -en can be inserted as an 1-functor into s-syntactic structure. I show that this prediction is borne out in the English verbal passives. Since the analysis makes use of the same -en in adjectival and
verbal passives such as (1a, b), it captures their morphological relatedness. Following Borer and Wexler (1987), the differences between the two kinds of passives are derived by the difference in the level where -en is inserted and integrated into structure.

I further demonstrate how the theory of l-functors predicts the essential properties of the constructions exemplified in (2):

(2) a. John had Bill decorate the cake.
   b. John had three people drop in unexpectedly.
   c. John had the cake decorated.

Then, I turn to the perfect construction in (3) and propose an l-functor-based analysis of it, modifying the analysis of have in (2):

(3) Perfect: John has scared Mary.

The organization of this chapter is as follows. Section 3.2 gives an overview of the previous analyses that propose to unify the passive morpheme and the perfect morpheme. Section 3.3 presents an analysis of two kinds of passives: adjectival and verbal passives. First, following and elaborating on Déchaine (1996), the section shows that adjectival passives such as (1a) are formed by one of the regular l-syntactic affixation processes. Attributing only the structurally represented meaning to -en, the present theory predicts that -en can be inserted into s-syntactic structure. It is shown that this prediction is borne out in English: one of the constructions that arise from the s-syntactic -en insertion is verbal passive as in (1b).

Section 3.4 examines English periphrastic experiential/causative constructions which have the have-VP form, as illustrated in (2a, b). The
related issue that is taken up in the discussion of the periphrastic causative construction is the interaction of have and vP in the sense of Chomsky (1995).

Section 3.5 considers a further set of predictions concerning what happens when have and -en appear together in a construction. The simultaneous appearance of -en and have is observed in the experiential/causative constructions of the surface have DP V-en form illustrated in (2c). Given the present theory and the analysis of multiple vP, as I demonstrate, the ambiguity of the construction naturally follows.

Section 3.5 also discusses the perfect construction in (1c). Incorporating the leading ideas that are shared by some analyses reviewed in section 3.2, I show that the same l-functor -en derives perfects in certain contexts where another l-functor have appears.

3.2 Previous Studies: Unifying Verbal Passive and Perfect Participles

The leading idea that verbal passive and perfect participles are one and the same has been entertained by several authors. This section examines these analyses, namely, Fabb (1984), Hoekstra (1986), Cowper (1989, 1995), and Noonan (1992). Their theoretical significance is that they attempt to answer the question of why verbal passive and perfect participles are often homophonous crosslinguistically. Their general answer is that these participles are identical in some languages precisely because they are the same participles, with the same morphosyntactic property.
Once the verbal passive and perfect participles are analyzed as identical, differences between the passive and perfect constructions need to be attributed to something other than the participles. One major difference between the perfect and the passive constructions is whether an internal argument is Case-checked or not. As the following discussion makes clear, all the previous analyses to be reviewed agree in a broad sense that this Case-related difference is reduced to the absence/presence of *have*.

In the rest of section 3.2, I refer to verbal passives simply as passives because adjectival passives are not discussed in the analyses that I examine.

### 3.2.1 Fabb (1984)

Fabb (1984: 47) advances the view that passive and perfect participles have the same properties with regard to Case: they are lexically associated with a Case feature in his system of Case-matching, which is quite similar to the system of Case-checking instead of Case assignment.

Fabb generalizes the visibility condition on θ-marking so as to apply to Case assigners such as verbs.¹ Thus, in Fabb's terms, verbs can θ-mark only if they are Case-matched. Case-matching is based on

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¹ The visibility condition is proposed by Chomsky (1982), who credits it to Joseph Aoun. The visibility condition requires that a θ-role can be assigned only to a Case-marked argument.
government. A Case feature can be matched with another only once. Fabb assumes that -en is lexically associated with a Case-feature.

Case-matching in the passive construction can be depicted as follows:

(4) a. The toy was kicked.

b. 

In (4b), the Case feature of -en ($C_i$) is matched with the Case feature of the verb that -en adjoins to ($C_j$). Because of this matching, the Case-feature of an internal argument ($C_j$) is left unmatched. Thus, the raising of the internal argument is forced in order to satisfy the visibility condition.

In the perfect construction, the auxiliary have plays a crucial role with respect to Case-matching of an internal argument. Fabb (p. 49) proposes that have is lexically associated with a Case feature. Case-matching in the perfect construction is illustrated in (5):

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In (5b), according to Fabb, the Case feature of -en \( (C_j) \) is percolated up to the lower VP. This percolated feature is matched with the Case feature of have. The feature of kick \( (C_j) \) is matched with the Case feature of the internal argument the toy \( (C_j) \). This analysis explains why have appears in the perfect construction. It is needed to license an otherwise unmatched Case feature.\(^2\)

### 3.2.2 Hoekstra (1986)

Hoekstra (1986) proposes that the internal argument of the passive participle cannot be checked for accusative Case, on the basis of the following principle:

\(^2\) Fabb (p. 80) notes that the Case feature associated with a verb has semantic significance. Fabb divides the Case features of -en into the 'perfective passive' Case feature and the 'perfective active' Case feature. -En can be associated with either of these features whereas auxiliaries be and have are associated with the perfective passive Case feature and the perfective active Case feature, respectively. The VP node that has the matched perfective active Case feature, for example, is semantically interpreted as perfective.
(6) A passive morpheme bears the external argument role iff it has Case.

In the Government and Binding framework, (6) demands that a passive morpheme be Case-marked by a verb in order to be $\theta$-marked. If so, however, a full NP argument cannot be Case-marked in the object position. It follows therefore that an internal full NP argument cannot stay in the object position in passives. The intuition behind (6) is that the passive morpheme is just an instance of an argument which requires a $\theta$-role and Case. This makes it possible to eliminate the unclear notion of 'absorption' of a $\theta$-role (cf. Chomsky (1981)). Similar ideas are shared by a number of analyses such as Jaeggli (1986) and Baker, Johnson, and Roberts (1989).

In the perfect construction, however, an internal argument is not raised to the subject position. Advancing the null hypothesis that the perfect participle is also headed by the same morpheme -en that heads the passive participle, Hoekstra proposes that *have* assigns Case to -en in the perfect construction (see also Roberts (1986: 40-42)). This is motivated by the Case assignability of the main verb *have*, under the assumption that the main verb *have* and the auxiliary *have* share the same properties. If *have* assigns Case to -en, the lexical verb does not need to assign its Case to -en. The verb's Case is therefore assigned to the internal argument. The Case assignment in the perfect construction is schematized as follows:
We have hide-en fugitives

Hoekstra traces the origin of the perfect construction to such an affected/causative subject *have* construction as (8a):

(8) a. We have fugitives hidden.

b. We have hidden fugitives.

He points out that (8a) does not necessarily mean that we hid fugitives whereas (8b) does mean that. To account for this (partial) shift of the controller of hiding, Hoekstra assumes that in (8a), *have* selects a small clause, and suggests the following Case assignment:

(9) We have [sc fugitives hide-en]

Hoekstra claims that the historical shift of Case assignment from (9) to (7) forces the external argument of the participle to be identical to the subject of auxiliary *have* because, in general, an auxiliary and a main verb share the same subject. Hoekstra (1986: 98)formulates this in the following way:

(10) If a verb assigns Case to a passive morpheme, its subject and the passive morpheme constitute an argument chain.

Due to (10), the subject of *have* and *-en* constitutes an argument chain in the perfect construction because *have* assigns Case to *-en*, as illustrated in (7). The chain is indicated by coindexing in (11):

(11) We, have hide-en, fugitives
Since -en bears an external θ-role, according to Hoekstra, the subject of have functions as if it bears the external θ-role. This analysis amounts to saying that -en is controlled by the subject of have.

In Hoekstra's analysis, as in Fabb's, -en is Case-marked by different elements in different constructions: by the head verb in the passive construction and by have in the perfect construction.

### 3.2.3 Cowper (1989)

To account for argument suppression and Case-absorption concerning the passive morpheme, Cowper (1989) proposes to make a distinction between a level of thematic content and a level of thematic positions. The level of thematic positions corresponds roughly to the level of predicate-argument structure in the sense of Zubizarreta (1987) and Rappaport and Levin (1988). Consider the following example:

(12) fire <agent, theme> thematic content

  <___, ___> thematic positions

  (___) structural Case features

To link these independent levels, Cowper adopts the right-to-left association principle based on Cowper, Scholten, and Smith (1987). Thus, in (12), the theme role is linked with the right slot of the thematic

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3 Cowper gives the θ-role labels in (12) and in the examples to follow just for expository purposes; they should be represented by variables in a more precise formulation.
positions and the agent role with the left slot. Both roles, then, are properly realized in syntax.

Cowper proposes that -en discharges one thematic position and one structural Case feature in verbal lexical representations. This gives rise to the following representation of fire-en:

(13) fire-en <agent, theme> thematic content
    <__> thematic positions
    θ structural Case feature

The linking principle associates the theme role with the single thematic position and leaves the agent role unassociated. This 'free' role gives rise to an implicit argument in agentless passives.

Cowper further postulates the following representation for have (either a main verb or an auxiliary):

(14) have <__, __> thematic positions
    (__ ) structural Case features

(14) indicates that have is thematically underspecified. According to Cowper, however, thematic positions must have the thematic content specified: this can be carried out either pragmatically (when have is a main verb) or by transmission of a free thematic role of a main verb (when have is an auxiliary).

To see how Cowper's system works, let us take a look at Cowper's D-structure of perfects:
One of the crucial assumptions concerning structure (15b) is that *have* selects a maximal projection ([+V]P) headed by *fired*. The structure is further based on the following assumptions. First, a version of the split IP hypothesis is adopted (Pollock (1989)) in which only one AgrP is postulated and is dominated by T. Second, the subject Sue is directly projected in the Spec of AgrP. Third, the participle is [+V], a neutralized category of a verb [+V, -N] and an adjective [+V, +N], following Chomsky's (1981) assumption about passive participles.

In (15b), while the internal argument is $\theta$-marked directly by *fired*, the argument of *have* (Sue) receives the unassociated agent role of *fired* through some $\theta$-role transmission from *fired* to *have*.

As for Case-marking, Cowper makes three assumptions. First, Cowper proposes that a Case-marker can assign Case to a verb it governs. Second, just like Fabb (1984) and Hoekstra (1986), Cowper
assumes that *have* can assign Case. The third assumption is that the passive/perfect participle retains 'Case-assignability' though it has lost its own Case. Therefore, if a passive/perfect participle P is assigned Case from another head according to the first assumption, P can in turn assign that Case to an argument. Given these assumptions, Case-marking in (15b) is accounted for as follows. Though the participle *fired* has lost its own Case, *fired* is assigned the Case of *have* because it is governed by *have*. Then, *fired* assigns this Case to *John*.

To sum up Cowper's analysis of Case in the perfect construction, the Case of a main verb is indeed eliminated, and the Case of *have* is assigned to a participle and 'transmitted' to Vs internal argument. This is different from Fabb/Hoekstra's, in which the Case of *have* is assigned to -en and the Case of a main verb is assigned to the internal argument of the verb.

Let us turn to Cowper's D-structure of passives:
A crucial assumption in (16b) is that be selects AgrP. Although Cowper follows Lasnik (1992) in assuming that be is a Case-marker, Cowper claims that AgrP is a barrier for be to govern [+V] and, thus, be does not transmit its Case to the participle. Without Case to assign, the participle does not assign Case to John. Thus, John is raised ultimately to the Spec of TP.

Cowper's analysis crucially hinges on her theory of lexical representations and the linking convention, Case and θ-role transmission, and the difference between the selectional properties of have and be.
3.2.4 Noonan (1992)

Based on Irish data, Noonan (1992) argues that the perfect ('perfective' in her terminology) participle is unaccusative. Her Irish examples show that the perfect construction is passive in form:

(17) a. *Tá Seán deannta e.
   aux Sean do(PERF) it(ACC)
   'Sean has done it.'

b. Tá se deannta ag Seán
   aux it(NOM) do(PERF) at Sean
   'Sean has done it.'

In (17b), the internal argument se 'it' is raised to subject position and bears nominative Case. The external argument Seán, in contrast, is marked with the preposition ag 'at'.

Noonan claims that not only perfect participles but also dyadic stative predicates are unaccusative. In Irish, dyadic stative predicates are realized as a nominal and appear in a locative construction, as illustrated in the following:

(18) a. Tá gaeilge ag Fliodhais
       is Irish at
       'Fliodhais knows Irish.'

b. Tá eagla roimh an bpuca ag Ailill
   is fear before the Puca at
   'Ailill fears the Puca.'
Based on these observations, Noonan gives the following generalization:

(19) Stative and perfect verbs are unaccusative.

Noonan advances a structural approach to unaccusativity, which is formulated in terms of Larson's (1988) VP shell. Specifically, Noonan assumes that NP arguments are projected into a specifier position of the verb by which they are selected. In this analysis, two VP layers must be projected when a verb selects two NP arguments. This gives rise to the following structures for transitive and unaccusative configurations:

(20) a. Transitive

```
     VP
   /   |
/NP₁ V' /
     |
    V   VP
     /   |
/NP₂ V' |
    /     |
   V      (PP)
     paint
     push
```

NP₁ in (20a) is an external argument whereas NP₂ in (20a) and NP in (20b) are internal arguments.

To Case-license NP₂ in (20a), Noonan proposes the following condition on accusativity:
Condition on Accusativity:

Accusative Case occurs whenever a functional Case checking category is governed by a verb at D-structure.

The layered VP structure in (20a) is, therefore, augmented by a functional category that is required for Case checking. The following structure illustrates the mechanism of accusative Case checking:

(22)

```
(22) VP
    /\  
   /   
  NP₁ V' 
    /\   
   /   
  V   FP
    /\   
   /   
  V'  F'
    /\   
   /   
  F  VP
    /\   
   /   
  Acc Case checking  NP₂ V' 
    /\   
   /   
  V   (PP)
```

Since stative and perfect verbs are unaccusative due to (19), they project structure (20b). This gives rise to their unaccusative property in Irish observed in (17, 18); one of the arguments must be expressed as a PP even if the verb selects two arguments.

It is obvious, however, that stative/perfect verbs in languages like English have different properties. In this respect, Noonan claims that have plays a significant role, just like Fabb, Hoekstra, and Cowper. The difference between Irish and English stative/perfect verbs is explained, according to Noonan, by the presence/absence of the lexical function
have. Irish, on the one hand, lacks this function. This is supported by the fact that Irish expresses possession in terms of locative expressions:

(23) Tá carr ag Seán

is car at

'Sean has a car.'

On the other hand, other languages that allow accusative stative and perfect constructions have the function *have*, the lexical entry of which is as follows:

(24) have: V, [NP, PredP]

Noonan claims that *have* licences a structural relationship between an NP and a predicate (which may be a clause or an NP). In effect, *have* helps unaccusative verbs build a transitive structure. This results in accusativity. The following structure illustrates a transitive structure built from stative nominals:
Stative nominals are incorporated into *have* and surface as denominal verbs. The accusative Case feature that *Mary* bears is checked at the Spec of PredP. This yields (25a).

Noonan applies the same analysis to perfect verbs. She proposes that *-en* heads a functional projection and selects VP. Licensing of a perfect transitive structure is illustrated in the following:
The accusative Case feature of NP₂ is checked at the Spec of enP in accordance with the Condition on Accusativity. An assumption that is required for the analysis to hold is that the functional category headed by en is a Case-checking category.

Notice that the derivation depicted in (26) gives rise to the following sequence of words:

(27)  a. I have the books read.
      b. She has her dinner eaten.

Noonan points out that this is precisely the perfect construction in Hiberno-English. To give the surface order of the perfect construction in standard English, Noonan suggests that the participial verb adjoins to have without actually incorporating into it.

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4 Actually these sentences in (27) are ambiguous between a perfect and a causative reading in this dialect/language.
3.2.5 Cowper (1995)

Based on Baker, Johnson, and Roberts (1989), Cowper (1995) proposes that the passive/perfect morpheme -en has two invariant nominal properties: it must be (i) θ-marked and (ii) Case-marked. In addition, Cowper assumes that -en bears the past tense feature.

Cowper postulates the structures in (28b, c) for the perfect construction:
a. The children have swept the floor.

b. PP:5

Cowper assumes that the auxiliary have moves prior to Spell-out, as (28b) shows. In Chomsky's (1995) framework, the features of the auxiliary have must be strong and be checked before Spell-out. Following Pollock (1989), Cowper implicitly assumes that auxiliaries have and be are semantically empty and are not visible at LF. Thus, they have to be raised before Spell-out; otherwise the derivation crashes.
Cowper adopts Chomsky's (1995) theory of feature checking in which verbs are already inflected in the lexicon. Based on this, Cowper postulates an abstract nominal element EN as the head of T. EN is the bunch of features that check the features of the passive/perfect morpheme suffixed to the verb in the lexicon.

In (28c), the lower TP is Case-checked and θ-marked by (the trace of) have. Being the head of this TP, according to Cowper, EN satisfies its nominal property.

Cowper proposes a control relation between a subject argument in the Spec of TP and the lower verb's external argument PRO in the Spec of VP in (28b, c). Postulating PRO as Vs external argument has a theoretically important implication: Vs external argument is neither
lexically suppressed nor syntactically eliminated in the perfect construction. The argument, however, cannot be a lexical NP that requires Case since there is no position available in which it can receive Case; the Spec of TP is not available for it because it is occupied by the external argument of *have*. Thus, the only possible realization of the external argument of the lower verb is PRO. Just as in a regular control construction, this PRO is subject to control by the main clause subject in the Spec of TP. Therefore, Cowper's analysis of control is preferable to Hoekstra's (1986) ad hoc argument chain that consists of the subject of *have* and -en, which is intended to derive a control relation.

According to Cowper, the structures in (28) capture the basic semantics of the perfect construction. Cowper (p. 10) says, “the past tense morpheme -en that governs the embedded VP places the floor-sweeping event earlier than the time associated with the verb *have*.” When the time associated with *have* is the moment of speech, the sweeping event is placed earlier than the moment of speech (present perfect). When the time associated with *have* is the past, the sweeping event is placed earlier than the past (past perfect).

Turning to the passive construction, Cowper proposes the structure in (29b). Θ-marking and Case checking are carried out as indicated:
A crucial difference between the passive and the perfect structures is how EN is integrated structurally. In (29b), EN is an argument incorporated into V. In (28b, c), by contrast, EN is a head that projects a full TP structure.

Cowper suggests that the temporal interpretation of the passive can be derived from the structural properties of EN in (29b): EN does not select any VP in the passive and thus it does not have any event to situate in time. Thus, there is no event which is postulated anterior to the time associated to the superordinate event denoted by the higher VP.

Cowper's association of the perfect and passive participles is weak in the sense that the structures associated with perfect EN and passive
EN are substantially different from each other: EN is a head that selects VP in the perfect whereas it is an adjoined argument in the passive. The first property is characteristic of heads and the second one is of arguments. The freedom of displaying one of these two distinct properties is stipulated for EN.

3.2.6 Summary and Preview of My Analysis

The above review of previous analyses strongly indicates that the passive and the perfect morphemes are one and the same morpheme, -en, in English with respect to Case theory. Ignoring technical details and problems, a general picture that has emerged is that -en invariantly blocks Case-marking of an internal argument by a verb. This picture can be maintained even in the perfect construction if auxiliary have helps an internal argument to be Case-marked in the object position. This property of auxiliary have is natural since as a verb of possession, have is certainly transitive. I take this coherent general picture as strong support for my view that the same -en appears in the passive and the perfect constructions.

From the next section on, I argue that the instances of -en in several constructions are not only Case-theoretically related but indeed derived from the same origin and thus related in other ways as well. To begin, I divide passives into adjectival and verbal passives, following Wasow (1977) and Borer and Wexler (1987), among others. Following Déchaine (1996), I propose an I-syntactic analysis of adjectival passives.
This analysis is the basis of my 1-functor-based analysis of verbal passives, which is discussed next. I show that the relation among the variants of -en can be accounted for naturally by an analysis of 1-syntactic -en and the theory of 1-functors. I defer the discussion of the perfect construction until section 3.5 because it requires an analysis of have, which is the topic of section 3.4.

3.3 Passives

In this section, I present an analysis of adjectival passives (section 3.3.1) and verbal passives (section 3.3.2).

3.3.1 L-syntactic Passives

As we have seen in Chapter 2, the adjective-forming -en is one of the affixes that stativize an event in 1-syntax. Under the present theory of the lexical entry, -en is inherently associated with a relation and selects an eventive complement (-en's LCS: \[ r \langle x \rangle CC \langle y \rangle \]). Therefore, -en heads a State configuration (structural realization of \( r \)) and selects an Event configuration (structural realization of \( e \)), giving rise to the State-over-Event configuration in (30b) and, when Lucie is raised to meet the Specifier Binding Condition, the derived structure in (30c):
(30)  a. Lucie is scared.

b.  
   \[
   \begin{array}{c}
   x \\
   \text{spec} \\
   x \\
   -en \\
   \end{array}
   \begin{array}{c}
   y \\
   \text{scare} \\
   \text{Lucie} \\
   \end{array}
   \]

c.  
   \[
   \begin{array}{c}
   x \\
   z \\
   \text{Lucie} \\
   -en \\
   \end{array}
   \begin{array}{c}
   y \\
   \text{scare} \\
   t_i \\
   \end{array}
   \]

The Specifier Binding Condition is repeated in (31):

(31)  The Specifier Binding Condition

In a recursive structure, the specifier of the upper lexical head binds the argument of the lower head.

In (30b, c), the higher structure associated with \( x \) is the stativization part while the embedded \( y \) structure is the eventive part. Given (30c), the interpretations of (30a) can be stated as 'Lucie has the attribute of being scared.'

This analysis has several significant consequences. First, in the present framework, no l-syntactic structure can specify an agent/causer argument. This derives the fact that l-syntactic passive participles have no agentive/causative interpretation. Second, since \( y \) is incorporated into -en, the derived head is morphologically realized as an adjective in
English due to the principle of Canonical Morphological Realization in (32):

\[(32) \quad x \rightarrow A \text{ in } \text{[spec [x compl]]} \) (namely, with incorporation)

Third, closely related with the second point, it is expected that the 1-syntactic passive participle shows adjectival properties in semantic aspects. I examine these properties of the 1-syntactic passive participle in more detail and show that they follow from the present analysis of the en-affixation.

3.3.1.1 Lack of Agentive Interpretation

One of the significant properties of the 1-syntactic passive is the lack of the agentive interpretation. As suggested by Pesetsky (1995: 29ff.) (cf. Wasow (1977, 1980) and Levin and Rappaport (1986)), the fact that the adverb very is compatible with adjectives but not with verbs indicates that the participial forms in the following examples are adjectives:

\[(33) \quad \begin{align*}
    a. & \quad \text{Sue was very hurried.} \\
    b. & \quad \text{Her answer was very balanced.}
\end{align*} \]

Whereas the very test is not a perfect diagnostics, the adjectival nature of the examples in (33) is supported by un-prefixation:

\[(34) \quad \begin{align*}
    a. & \quad \text{Sue's walk was unhurried.} \\
    b. & \quad \text{Sue's view is unbalanced.}
\end{align*} \]

(Rose-Marie Déchaine (p. c.))
These adjectival passives cannot cooccur with an agentive/causative by-phrase, as illustrated in the following:

(35)  
   a. *Sue was very hurried by John.  
   b. *Her answer was very balanced by fairness.  

   (Déchaine (1996:7); see also Pesetsky (1995: 29ff.))  

The examples in (35) demonstrate that l-syntactic passive participles lack the agentive interpretation. This is exactly the prediction made by the present analysis in which an agentive argument is absent in the structure of l-syntactic passives, illustrated in (30b), repeated in (36):

(36)  

There are several pieces of crosslinguistic evidence for this analysis of adjectival passives. For example, Hebrew shows the same contrast with respect to an agent phrase between verbal and adjectival passives, according to Borer and Wexler (1987: 136-137):  

(37)  
   a. ha-yalda sorka ('al-yedey 'ima shel-a).  

   the-girl combed.PASS by mother of-her  

   'The girl was combed (by her mother).'

---

6 As one might notice, the participle-forming morphemes are different between adjectival and verbal passives in Hebrew (and Chichewa in (38)). This is, however, not relevant to the issue of l-syntactic passive participles per se. It becomes relevant when we consider s-syntactic passive formation. See section 3.3.2.4.
b. ha-yalda hayta mesoreket (*'al-yedey 'ima shel-a).

the-girl was combed.ADJ

'The girl was combed (by her mother).'

Borer and Wexler note that (37a) implies an agent even if it has no overt agent phrase while (37b) does not imply that anyone combed the girl.

The same contrast is further observed in Chichewa. According to Dubinsky and Simango (1996: 751), an agent argument is obligatorily absent with stativized verb forms in Chichewa. Compare the following pair of a passive (37a) and a stative (37b):

(38) a. Mbale zi-na-tsuk-idwa (ndi naphiri).

plates AGR-PAST-wash-PASS by Naphiri

'The plates were washed (by Naphiri).'


plates AGR-PAST-wash-STAT by Naphiri

'The plates were washed by Naphiri.'

The obligatory absence of an agent phrase is also observed in what is often called resultative constructions in a number of languages. The following is from Nivkh, cited from Comrie (1981):\(^7\)

(39) Tus ra-veta -d'.

meat roast-RESULT

'The meat has been roasted.'

Comrie remarks that an agent phrase must be omitted in (39).

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\(^7\) The verbal ending morpheme -d' is not glossed in Comrie (1981). Neither is it discussed by Nedjalkov and Otaina (1988), another work on Nivkh. I assume I can safely ignore it.
A resultative construction such as (39) is similar to the adjectival passive construction in the sense that the underlying internal argument is the subject. Compare (39) with its transitive counterpart in (40):

(40) Umgu t'us tʰa -d'.
woman meat OBJAGR.roast

'The woman roasted the meat.'

Nivkh's resultative suffix -veta in (39) usually requires the promotion of direct object in the corresponding active sentences into subject. This is confirmed by agreement. In Nivkh, certain verbs agree with a direct object, which immediately precedes a verb. The agreement is signaled by the change of their initial consonant. In (40), the initial consonant tʰ- of the verb is triggered by agreement with its direct object t'us 'meat'. In (39), by contrast, the same verb has a different initial consonant r-, losing agreement with t'us. This is evidence that t'us is no longer the direct object of the verb.

The subject property of the internal argument follows from the present analysis as follows. The Specifier Binding Condition applies to the complex structure for adjectival passives as in (36). This ensures that the overt specifier argument binds the stem verb's argument. In s-syntax, the specifier argument is raised to the Spec of IP, surfacing as subject.

These two properties, the lack of agency and the object-to-subject 'promotion', of the Nivkh resultative construction strongly indicate that the construction parallels adjectival passives. In other words, the resultative suffix -veta is a kind of l-syntactic passive morpheme.
As further examples of 1-syntactic passives, we could add the following examples from various languages which conform to the lack of agency and the lack of the implication of a prior action:

(41) a. Archi
    nols zabollirsi ebt’ni-li b-i.
    tie-PERF is
    'The horse is tied to the fence.'
    (Kibrik (1988, 172))

b. Aleut
    sagimagii chamgu-gi-∅-x.
    Her-face is-washed-OBJ.RESULT-CONSTATIVE
    'Her face is in the state of being washed.'
    (Golovko (1988: 186))

c. Uzbek
    Devor-da miltiq os-iqlik (tur-ibdi).
    wall-LOC rifle(NOM) hang-OBJ.STAT (is-AUX.PR)
    'There is (lit. hangs) a rifle on the wall.'
    (Nasilov (1988: 221))

d. German
    Das Fenster ist (*von ihnen) geöffnet.
    the window is by them opened
    'The window is opened by them.'
    (Nedjalkov (1988b: 429))
As for (41a-c), the authors referred to above assert that an agent phrase cannot appear in them. (41d) is ill-formed because of the presence of the agent phrase, according to Nedjalkov (1988b).

The absence of an agentive interpretation in adjectival passives and stativized verbs is also confirmed by the fact that they cannot license agent-oriented adverbs while verbal passives can. Examples are from Chichewa and English:

(42) a. Chitseko chi-na-tsek-edwa mwadala.
door AGR-PAST-close-PASS deliberately
'The door was closed deliberately.'

door AGR-PAST-close-STAT deliberately
'The door was closed deliberately.'

(Dubinsky and Simango (op. cit.))

(43) a. This edition was (*very) abridged deliberately.

b. Sue was (*very) hurried on purpose.

Henry Davis and Hamida Demirdache (p. c.) independently suggest that the examples in (41) can be l-syntactic passives but not necessarily. They can be middles, for example. Middles cannot license a by-phrase and, presumably, its crosslinguistic equivalent.

Furthermore, Shopen (1985: 249) points out, based on a number of studies cited therein, that there are many languages that permit only agentless passives: Latvian, Classical Arabic, and Ute, among others. A Latvian example is cited in (i):

(i) Es tieku macits (*no mates).
    I am taught (by mother)

If such 'obligatorily agentless' passives include s-syntactic passives, the conclusion that the examples in (41) are l-syntactic passives cannot be maintained. It remains to be shown that s-syntactic passives in the languages cited in (41) permit an agentive phrase.
Yet another piece of evidence for the lack of the agentive reading is that adjectival passives and stativized verbs cannot license purpose clauses. This is illustrated in the following examples:

(44) a. Chakudya chi-na-phik-idwa kuti anthu food AGR-PAST-cook-PASS [so].that people a-sa-fe ndi njala. AGR-NEG-die from hunger 'The food was cooked so that people should not die of starvation.'

b. *Chakudya chi-na-phik-ika kuti anthu food AGR-PAST-cook-STAT [so].that people a-sa-fe ndi njala. AGR-NEG-die from hunger 'The food was cooked so that people should not die of starvation.'

(Dubinsky and Simango (op. cit.))

(45) a. This edition was (*very) abridged to make it handy.

b. Sue was (*very) hurried to be on time.

The following sentence from Tongan can be added as an analogous example. The adverb vave 'quickly' cannot appear in the Tongan resultative construction:

(46) 'Oku punu-a (*vave) 'a e tupu. close-PRES.OBJ.RESULT (*quickly) door 'The door is (*quickly) closed.' (Polinskaja (1988: 295))
In (46), this adverb is incompatible with the stative interpretation of the construction because it is event-oriented and imply the previous action, which is absent in the meaning of (46).

3.3.1.2 Resultative State

Consider the following examples:

(47) a. a recently erupted volcano  
b. a rotten apple  
c. a fallen apple

The passive participles in (47) are 1-syntactically-formed adjectives because they do not imply agency. They instead express a resultative state, a state that results from a previous event. The existence of such 'resultative' participles are attested in a number of languages. The following is a detailed list of the examples from Haspelmath (1993:157-158):

(48) a. Mongolian: deverbal adjective in -mal  

(i) card-mal 'starched'  card-ax 'to starch'  
tovi-mol 'engraved'  tovi-x 'to engrave'  
(ii) bee-mel 'rotten'  bee-x 'to rot'  
xurs-mal 'rancid'  xursi-x 'get rancid'

b. Modern Greek: participle in -menos  

(i) gram-menos 'written'  graf-o 'I write'  
diavas-menos 'read'  diavaz-o 'I read'
(ii) petha-menos ‘dead’ pethen-o ‘I die’
pije-menos ‘gone’ pijen-o ‘I go’

c. Kanuri (Saharan): -gata
(i) nam-gata ‘broken’ nam-njin ‘I break’
le-gata ‘touched’ le-njin ‘I touch’
(ii) nap-kata ‘seated’ nam-njin ‘I sit down’
bo-gata ‘lying’ bo-njin ‘I lie down’

d. Margi (Chadic): participle formed by complete or partial reduplication
(i) hwahwa ‘boiled’ hwa ‘boil’
mbumbu ‘sewn’ mbu ‘sew’
(ii) sasa ‘lost’ sa ‘get lost’
fifi ‘swollen’ fi ‘swell’

e. Hungarian: participle in -(V)tt
(i) egesit-ett ‘united’ egesit ‘unite’
ismer-t ‘known’ ismer ‘know’
(ii) tapasztal-t ‘experienced’ tapasztal ‘experience’
er-ett ‘ripe’ er ‘reach’

f. Turkish: deverbal adjective in -ik/-Ik/-uk/-uk
(i) klr-lk ‘broken’ klr-mak ‘break (tr.)’
ac-lk ‘open’ ac-mak ‘open’
(ii) sol-uk ‘wilted’ sol-mak ‘wilt’
degis-ik ‘changed’ degis-mek ‘change (intr.)’

g. Arabic: passive participle maC1C2uuC3
(i) maktuub 'written' kataba 'wrote'
    maqtuul 'killed' qatala 'killed'
(ii) matluuf 'ruined' talifa 'be annihilated'
    makmuul 'complete(d)' kamula 'be complete'

h. Mam (Mayan): -na participle
(i) yuup-na 'extinguished' yuup- 'put out'
    toq-na 'broken' tooq- 'break (tr.)'
(ii) kyim-na 'dead' kyim- 'die'
    noj-na 'full' nooj- 'fill'

i. Panare (Carib): -sa' 'nominalizer'
(i) upa-sa' 'stagnant' upa 'stagnate (water)'
    y-upu'ma-sa' 'fallen' upu'ma 'fall'
(ii) pu'ma-sa' 'killed' pu'ma 'kill'
    y-o'ma-sa' 'changed' o'ma 'change'

The resultative property of these l-syntactic adjectives is derived from the configuration of stativization, repeated in (49a). Its morphosyntactically realized version is given in (49b) (in which the eventive head is incorporated into the affix, giving rise to an adjective in English):

\[ \text{(49) a.} \]

\[ DP_i \]
\[ \text{x} \]
\[ \text{y} \]
\[ \text{t} \]
\[-\text{affix} \]
(49a) denotes the resultative state in the following way. Stativized predicates are predicated of the argument of the stem verb (the theme argument in a traditional terminology). An 1-syntactic stative/relational structure in (50) represents the appropriate predication.

(50) The hat is red.

In (50), the specifier of $x$ is interpreted as the subject of predication. Compare (50) with an example of (49a), given in (51):

(51) Sue's view is balanced.

Just as in (50), the specifier of $x$ in (51) is the subject of predication. In (51), there is another crucial property, that is, the verb's argument is
raised to Spec of AP, functioning as the subject of predication. The stativized structure in (51), thus, attributes to y's complement (an internal argument) the property of being in a state (x-projection) which arises from an event denoted by y-projection. This is essentially the resultative interpretation.

3.3.1.3 Time-stability

To add semantic support that 1-syntactic -en forms an adjective, Haspelmath (1993) points out that the resultative participles express a more or less time-stable state. This time-stability of the resultative participles indicates that they are adjectives, according to Haspelmath, on the basis of the observation that time-stability is in general a property of adjectives. This idea is shared by Givon (1979: 320ff) from a typological point of view. In my analysis, this property follows because adjectival passives are assigned relational structures that are by definition stative.

3.3.2 S-syntactic Passives

The above discussion has shown that the present analysis of 1-syntactic stativization derives important properties of predicates headed by -en. The lack of agency and the resultative property follow from the stative configuration headed by -en. Their adjectival status in English is accounted for by a principle of Canonical Morphosyntactic Realization.
It must be pointed out that we have attributed no non-structural semantic property to -en. All the information that -en inherently has is that it is stative and takes an eventive complement. That is, -en is purely structural in the definition given in Chapter 2, repeated in (52a). Thus, due to the Functionalization Principle, repeated in (52b), -en can be inserted into s-syntactic structure and be a head of a functional category:

(52)  

a. Pure Structurality

An l-syntactic head is purely structural iff it has no (non-structural) semantic feature specification.

b. The Functionalization Principle

Purely structural l-syntactic heads, and only these, can be inserted as an l-functor into s-syntactic structure.

The s-syntactic insertion of -en is restricted in the way that its inherent property is satisfied. First, due to the Condition of Inclusiveness, repeated in (53), the l-functor -en must project its base’s projection, namely, the spec-head-complement projection:

(53)  

The Condition of Inclusiveness

Any structure formed by the computation is constituted of elements required by the lexical items.

Second, -en’s property of selecting an event is satisfied if it selects the vP that yields a Spec-v-VP configuration, gives rise to an agentive/causative

---

9 In Chapter 2, I defined the base of an l-functor L as an l-syntactic head from which L is derived.
interpretation; hence an event. Satisfying these two requirements, the l-functor -en gives rise to the following s-syntactic configuration:

(54) \[
\begin{array}{c}
\text{FP} \\
\text{Spec} \quad F' \\
\quad F \quad vP \\
\quad -en \quad \text{DP} \quad v \\
\quad \quad \quad \quad v \quad \text{VP}
\end{array}
\]

Furthermore, since the l-functor -en is still lexical, it is subject to the Specifier Binding Condition. To meet this condition, just like in l-syntactic passive, an argument is raised into the Spec of -en, as illustrated in (55):\(^{10}\)

(55) \[
\begin{array}{c}
\text{FP} \\
\quad \text{DP}_i \quad F' \\
\quad \quad F \quad vP \\
\quad \quad -en \quad t_i \quad v' \\
\quad \quad \quad \quad v \quad \text{VP}
\end{array}
\]

(55) is the general representation of verbal passive predicates.

Let us consider a full-fledged passive construction. I assume that an l-functor -en cannot bear tense just as its base cannot. Thus, as discussed in section 2.8.1, a semantically vacuous v (be) selects FP

\(^{10}\) As it is a trigger of s-syntactic movement, the Specifier Binding Condition should be reducible to feature checking. I leave the question for future research.
headed by -en in (55). When a vP headed by this v is selected by I, the structure (56b) arises for (56a):\(^{11}\)

\[
\text{(56) a. The prime minister was advised.}
\]

\[
\begin{array}{c}
\text{IP} \\
\downarrow \\
I \\
\downarrow \\
vP \\
\downarrow \\
v \\
\downarrow \\
fP \\
\downarrow \\
\text{was DP}_i \\
\downarrow \\
F \\
\downarrow \\
\text{-en t}_i \\
\downarrow \\
v \\
\downarrow \\
vP \\
\downarrow \\
v \\
\downarrow \\
V \\
\downarrow \\
\text{advise the prime minister}
\end{array}
\]

Following Déchaine (1996), the present analysis does not suppress an agentive argument in the Spec of vP. Instead, it is a trace of DP, in the Spec of FP. Since a 'suppressed' argument in verbal passives canonically receives a specific reference, I assume that DP, is pro.\(^{12}\)

Let us turn to three consequences of the present analysis.

\(^{11}\) In a minimalist framework, structure building proceeds as movement takes place from bottom up. Strictly speaking, therefore, there is no derivational stage such as (56b) in which all heads project structure but no movement has applied. I use 'D-structure'-like representations such as (56b) for expository purposes.

\(^{12}\) Although I do not consider how to license a by-phrase in verbal passives, pro in the Spec of FP should be able to license it.
3.3.2.1 Agency

Recall the structure of the l-syntactic passive. Its morphosyntactically realized version is repeated below:

\[(57) \qquad \text{AP} \quad \text{DP}_1 \quad \text{A'} \quad \text{A} \quad \text{VP} \quad \text{V}_j \quad \text{-affix} \quad t_j \quad t_i \]

One of the major differences between (55) and (57) is that (55) but not (57) contain vP, whose Spec is a position for an agentive/causative argument. This accounts for the fact that the agentive/causative interpretation is implied only in verbal passives. This is illustrated in the following well-formed sentences that have an agent-oriented adverb (58) and a purpose clause (59):

\[(58) \quad a. \quad \text{This edition was abridged deliberately.} \]
\[b. \quad \text{Sue was hurried on purpose.} \]

\[(59) \quad a. \quad \text{This edition was abridged to make it handy.} \]
\[b. \quad \text{Sue was hurried to be on time.} \]

3.3.2.2 Lack of Resultativity

In contrast to l-syntactic passives, s-syntactic passives are not restricted to express a resulting state. Compare the following pairs:

\[(60) \quad a. \quad \text{The window is broken.} \quad \text{1-syntactic passive} \]
b. The window was broken (by Bill). s-syntactic passive

(61) a. *The ball is hit. l-syntactic passive
b. The ball was hit (by John). s-syntactic passive

I have shown in section 3.3.1.2 that the resultative interpretation of l-syntactic -en adjectives is derived from the predication of the stem verb's argument. The ill-formedness of (61a) is expected to follow from the incompatibility between the resultative property of the l-syntactic passive and some lexical property of the verb hit, though a lexical analysis of hit must await further research.

The well-formedness of (61b) is predicted by the present analysis of s-syntactic passives because an s-syntactic passive participle is not predicated of the stem verb's argument. In the l-functor phrase headed by -en given in (62), -en takes vP as a complement and the Spec of vP is raised to the Spec of FP to meet the Specifier Binding Condition:

(62) FP
    / \     
   pro F'   F
     /     \  
    F vP   
      / \   t_i v'
     -en t_i v'
       \   \  
        v VP
          / \   
         V DP  
           /   
          advise the prime minister

This movement guarantees that the derived participle is predicated of the agent/causer argument. This means the absence of the predication of Vs
(internal) argument. Therefore, s-syntactic passives are not limited to the resultative interpretation.

### 3.3.2.3 Strong Crossover

The central claim of Baker, Johnson and Roberts (1989) is the following:

\[(63)\] The passive morpheme is an argument.

Adopting (63), Baker, Johnson and Roberts formulate the suppression of an external argument as θ-marking of the passive morpheme. They propose that the passive morpheme can be inserted in any argument position. That would involve the incorporation of the passive morpheme from an argument position, canonically an external argument position, into I.

Baker, Johnson, and Roberts argue that the 'suppressed' argument in passives is syntactically active on the basis of strong crossover effects. They point out that agentless passives lack an interpretation in which the understood subject is coreferential with the derived subject. In other words, (64a,b) do not mean (65a, b), respectively:

\[(64)\]
\[
\begin{align*}
a. & \quad \text{They were killed.} \\
b. & \quad \text{They were admired.}
\end{align*}
\]

\[(65)\]
\[
\begin{align*}
a. & \quad \text{They committed suicide.} \\
b. & \quad \text{They admired themselves.}
\end{align*}
\]

(Baker, Johnson, and Roberts (1989: 224))
Baker, Johnson, and Roberts assign the following (simplified) representation to an example like (64a):\footnote{Following Kayne (1987), Baker, Johnson, and Roberts assume that be selects the IP to which -en is adjoined.}

(66)  *They, were kill+en, t, IMP\_i.

(IMP: the coda of the chain headed by -en)

Adopting Rizzi's (1986) chain-formation, Baker, Johnson, and Roberts reduce the ill-formedness of (66) to the general ill-formedness of the following structure (they\_i=X_i, en\_i=Y_i):

(67)  *X, Y, t, i

(where X c-commands Y and Y c-commands t and there is movement from t to X)

In the present analysis of s-syntactic passives, this strong crossover effects in (64) can be accounted for in a parallel way. Consider the LF of (64) in the present analysis:
We can say that (68) contains an instance of the schema in (67), namely, [they, ...pro, ...t] (ignoring the trace of pro) and thus is ruled out for a chain-theoretic reason. This is exactly because the 'suppressed' argument is syntactically active, which is the point of the strong crossover evidence by Baker, Johnson, and Roberts.

Baker, Johnson and Roberts' analysis is based on a pre-VP-internal subject hypothesis model. If a VP-internal subject hypothesis (Fukui and Speas (1986), Kitagawa (1986), Koopman and Sportiche (1988), and Kuroda (1988)) is adopted, the structure and the incorporation of the passive morpheme are depicted as follows:
This is a situation where an ECP effect arises. For concreteness, consider one way of accounting for ECP effects which is based on minimality barriers in the sense of Chomsky (1986b). In this type of analysis, V in (69) is the head closer to the passive morpheme and the VP that is headed by such V is a minimality barrier for any movement that crosses it. Thus, the incorporation of the passive morpheme to I is rendered impossible.\footnote{The problem is not solved by Baker's (1988: 64) Government Transparency Corollary (GTC), given in (i):

(i) A lexical category which has an item incorporated into it governs everything which the incorporated item governed in its original structural position.

According to the GTC, when V is incorporated into I in (69), government by I into VP is made possible in principle. Since the trace of V is still a closer governor, however, government by I into VP is blocked by some minimality condition independent of the GTC.

This is, however, not a criticism of Baker, Johnson, and Roberts' original analysis in which a VP-internal subject hypothesis is not adopted. I am arguing that if a VP-internal subject hypothesis is adopted, as is widely assumed, then their analysis cannot be maintained. The same problem arises in a vP-internal subject hypothesis as well.}

Hale and Keyser (1993: 63) argue that an ECP effect holds of essentially the same configuration and movement as those in (69). Hale
and Keyser assign to examples in (70) a configuration in (71):

(70)  
   a. *She metaled flat. (cf. She flattened some metal.)
   b. *He speared straight. (cf. He straightened a spear.)
   c. *They screened clear. (cf. They cleared a screen.)

(71)

If the movement in (71) is ruled out as an ECP effect, (69) must be ruled out for the same reason. Thus, Baker, Johnson, and Roberts' incorporation approach to the passive morpheme cannot avoid the ECP effect under a widely-accepted VP-internal subject framework.

The present analysis, however, does not face the ECP problem because the passive morpheme does not move from a VP- or vP-internal argument position: it is 'base-generated' in the head position which will be incorporated to the closest 1° position. The present discussion indicates that the passive morpheme is a (functional) head rather than an argument at least in languages like English.
3.3.2.3 Non-agentive Passives

It is evident that non-agentive stative verbs may appear in English verbal passives. In the present framework, they must lack vP. How can they be passivized s-syntactically? Examples are the following:

(72) John is loved/feared/hated/respected by Mary.

Before accounting for the passivizability of these verbs, let us consider how these verbs are analyzed in the present l-syntactic framework. Adopting the analysis of Noonan (1992) (see section 3.2.4) in the present l-syntactic framework, I take *love*, for example, as a quality head. Specifically, I assume that *love* is associated with the following LCS:

(73) love: [q LOVE]

Just as in the case of *red*, discussed in section 2.6.5, *love* is selected as a complement of a stative head and incorporated into its head position, as illustrated in the following:

(74) \[\begin{array}{c}
| \quad y \\
\text{n} \\
\text{baby} \\
\text{love}_{t_i}
\end{array}\]

In the next step of the structure building derivation, the \(y\)-projection derivatively headed by *love* in (74) is related with an argument by another stative configuration. This gives rise to the State-over-State configuration in (75):
Then, the head love is incorporated into $x$. When principles of Canonical Morphosyntactic Realization apply, the following structure is derived:\(^{15}\)

(76)

Since VP is saturated by its own specifier for the purpose of predication, no vP is introduced in s-syntax. (76) is the representation of the semantic relation in a sentence Everyone loves the baby, which can be read, 'everyone has love of the baby.'

To account for the fact that the 1-functor -en may select a non-eventive VP such as (76), it is necessary to weaken a selectional

---

\(^{15}\) I assume here that the upper relational head $x$ in (75) can surface as V. I will return, in section 3.4.1.2, to a rule of which takes care of the nominal realization of love. (76) is essentially the same as Noonan's (1992) structure in (25b).
restriction of the 1-functor -en, whose base only selects an eventive complement. Such weakening, however, must be limited so that the 1-functor -en only takes a 'verbal' complement. Thus, what seems to be relevant is the categorial status of a complement. The 1-functor -en may select a non-eventive complement if and only if the complement is verbal. This effect follows from the fact that -en is a functional category. It is widely assumed that the selectional property of functional categories is based on categorial but not semantic terms (e.g. C is assumed to select IP).

Thus, as a functional category, the 1-functor -en satisfies its selectional property not directly depending on the eventive property of the complement but indirectly in terms of the morphosyntactic form that an eventive head can be realized as. Due to a principle of Canonical Morphosyntactic Realization, an eventive head is realized as V. Therefore, the selectional property of -en is satisfied when it selects VP.

In other words, VP can satisfy the selectional property of the 1-functor -en whether it is aspectually eventive or stative. It follows that a stative VP such as (76) can be properly selected by the 1-functor -en. Thus, a stative passive sentence such as *The baby is loved (by everyone)* is assigned (77):
It must be recalled that an eventive VP has no specifier, unlike the stative VP in (77). Since an independent condition of s-syntactic predication requires that an eventive VP have a subject, it is selected by \( v \), which provides the eventive VP with a subject. Thus, when VP is eventive, it follows that the I-functor \(-en\) directly selects \( uP \) which forms Spec-\( u-VP \).

As a consequence of the functionalization of \(-en\), its selection restriction is weaker than a semantic selection restriction. Even though \(-en\) I-syntactically takes only an eventive complement, it may s-syntactically take a stative complement iff the complement is VP. This weaker formulation, which is freed from the original selectional restriction of the adjectival \(-en\), predicts that the I-functor \(-en\) is selectionally less
restricted than l-syntactic -en. The examples in (72) show that this is a correct prediction.

3.3.2.4 Variation of Verbal Passive Morphemes

In the present theory, the passive/adejctival morpheme can be, but does not have to be, inserted s-syntactically. This flexibility partially accounts for the fact that there are languages like Hebrew and Chichewa that have a passive morpheme that is morphologically distinct from an adjectival passive morpheme. The relevant examples are repeated below:

(78) Hebrew
   a. ha-yalda sorka ('al-yedey 'ima shel-a).
      the-girl combed.PASS by mother of-her
      'The girl was combed (by her mother).'
   b. ha-yalda hayta mesoreket ('al-yedey 'ima shel-a).
      the-girl was combed.ADJ
      'The girl was combed (by her mother).'

16 However, Borer and Wexler (p. 137) point out that in Hebrew, the present tense forms of adjectival and verbal passive participles are the same. Thus, (i) is ambiguous:
   (i) ha-yalda mesoreket.
      the-girl combed
      'the girl is being combed.' or 'the girl is combed.'
   The ambiguous participle in (i) is identical to the adjectival passive form (see (78b); the same adjectival form is used in the future tense as well). This indicates that the adjectival form is extended into verbal passives although the extension is limited only in the present tense for some reason.
In (78, 79), the (a)-examples are verbal passives while the (b)-examples are adjectival passives. The morphemes that are suffixed to the verbal heads are distinct.

There arises a question, however, as to why the adjectival passive morpheme is not s-syntactically employed in these languages. There seems to be some condition that blocks the otherwise most economical extension of the adjectival morpheme to verbal passive. It is conceivable that the extension of the adjectival passive morpheme to verbal passives is blocked by the independently existing verbal passive morphemes in these languages (e.g. -idwa in Chichewa in (79)).

3.3.3 Summary: Passive/Adjectival Morpheme

This section has examined the analysis of the adjectival/1-syntactic and verbal/s-syntactic passive formations. Their structural schemata are repeated below for convenience:

---

17 I owe this idea of blocking to Michael Rochemont (p. c.).
I have examined a broad range of data of adjectival passive participles and discussed their crucial properties, among which are the lack of agency and the resultativity condition. I have demonstrated that these properties follow from the analysis of l-syntactic stativization.

There are two significant aspects of the analysis of s-syntactic passives: (i) the verbal passive formation as the s-syntactic -en-suffixation and (ii) the redefinition of 'suppression' of an argument: it is formulated as binding of the argument (the binding arises from the s-syntactic movement of \( \text{pro} \)); hence no argument is actually suppressed. One of the major contributions of the theory of l-functors is concerned with (i). The theory predicts the existence of s-syntactic passivization. S-syntactic passivization departs from l-syntactic passivization in two respects. First, it 'suppresses' the agent/causer argument. Second, the functional
property of the 1-functor \(-en\) allows a non-eventive complement if the complement is a potentially event-denoting category, i.e. VP:

(81) 

\[
\begin{array}{c}
\text{FP} \\
\text{pro} \\
\text{F} \\
\text{F} \\
\text{V} \\
\text{-en} \\
\text{t} \\
\text{V} \\
\end{array}
\]

The theory of 1-functors constrains other s-syntactic lexical insertions, which have been unconstrained in related analyses such as Borer and Wexler (1987) and Spencer (1991). In the present theory of 1-syntax, the stative-eventive distinction of lexical items is represented in configurational terms. If a lexical item is stative, it projects an 1-syntactic spec-head-complement projection; if a lexical item is eventive, it projects an 1-syntactic head-complement projection. In addition to this property, most lexical items are specified for more semantic import, which is not configurationally represented. For example, the adjective-forming \(-able\) is inherently specified for its meaning, which can be represented as ABLE. The adjective-forming \(-en\), however, is specified for being stative but with no other semantic content. In other words, \(-en\) is purely structural. The Functionalization Principle proposed in Chapter 2 demands that only the purely structural item can be an 1-functor. Therefore, \(-en\) can be an 1-functor because it is purely structural but -
able cannot because it is specified for a non-configurational semantic feature.\textsuperscript{18}

3.4 Have

This section considers a second light head have. First, I introduce an \textit{l}-syntactic analysis of possession in section 3.4.1. By means of \textit{l}-syntactic configuration, the analysis accounts for alienable possession, inalienable possession; and possessive nominals. This analysis of possessive have is the important basis of the \textit{l}-functor analysis of have discussed from section 3.4.2 on. In section 3.4.2, I examine Ritter and Rosen (1993), which discusses the causative/experiential periphrastic have-VP construction in English such as the following.

(82) a. John had his student walk out of the classroom.

b. John had three people drop in the office.

Section 3.4.3 presents my analysis of the experiential interpretation of the have-VP construction. Section 3.4.4 deals with the causative interpretation of this construction.

\textsuperscript{18} I did not discuss the ill-formedness of passivized unaccusatives (*\textit{It/There was arrived}) in general and of passivized unergatives in English (e.g. *\textit{It/There was danced}). See Perlmutter (1978) and Perlmutter and Postal (1984a, b).
3.4.1 Possession in L-syntax

In this section, I show that my system of l-syntax accounts for possessive relations in configurational terms.

3.4.1.1 Alienable Have

I first discuss alienable-possessive have, as in (83):

(83) John has a dog/five bucks.

It is widely assumed (Cowper (1989), Noonan (1992), and Ritter and Rosen (1993)) that 'possessive' have has no semantic content. It is also widely assumed (the same references above) that have is an argument-taking verb. These insights can be formulated in the l-syntactic framework in a slightly different way. Instead of attributing no semantic content to have, I associate with it a stative/relational meaning. This meaning is represented here by an l-syntactic spec-head-complement configuration.

I have pointed out in Chapter 2, following Hale (1986) and Hale and Keyser (1993), that the spec-head-complement configuration denotes central coincidence. I have defined central coincidence as follows:

(84) a. Central coincidence is a relation between $\alpha$ and $\beta$

when $\alpha$ and $\beta$ co-exist in a certain place at a certain time.
b. Central coincidence holds between the specifier argument and the complement argument in an 1-syntactic configuration.

A default interpretation of central coincidence between entities corresponds to the traditional notion of possession. Thus, the example in (83) can be assigned the following stative/relational configuration:

(85) \[
\begin{array}{c}
\text{John} \\
\text{have} \\
\text{a dog/five bucks}
\end{array}
\]

In (85), John and a dog/five bucks are in the relation of central coincidence, which is interpreted by default as possession.

Departing from Hale and Keyser and adopting the analyses of have in Belvin (1993) and Déchaîne, Hoekstra, and Rooryck (1994), I make some refinement of possessive relations. Central coincidence expressed by (85) should be interpreted not simply as possession but as alienable possession when no semantic features are involved in the head position. This is consistent with the fact that the possessive relation between John and a dog/five bucks is not forced by any intrinsic property of John or a dog/five bucks: they are separable.

3.4.1.2 Intrinsic Possession: Possessive Nominals

The simplex relational configuration is the basis of another set of possessive relations expressed by relational nouns. It is well-known that
possessive nominals express various relations depending on the properties of the possessee. Consider the following examples cited from Barker (1995: 8):

(86)  

a. John's child  Kinship terms  
b. John's nose  Body part terms  
c. the table's top  Part-whole relations  
d. the woman's pen pal  Arbitrary relations  
e. John's cat  Extrinsic relations

In (86), the relation between a head noun and a possessor is determined by the lexical restriction of the noun. As Barker (1995) claims, the noun *child* in (86a) is relational in the sense that its inherent meaning implies the relation with another entity, a parent. The noun *nose* is a body part, which semantically requires a body that it belongs to. The noun *top* expresses a general part-whole relation and implies a whole that it is a part of. And the noun *pen pal* implies somebody that one is in a 'pen pal relation' with.

By contrast, in cases where the head noun is non-relational, the relation can be just about anything pragmatically imaginable. *Cat* in (86e) is such a noun. The default interpretation of the relation between *John* and *cat* is possession.20

---

19 It is necessary to distinguish inherently relational nouns such as *father* and optionally relational nouns such as *child*. The contrast depends on whether the association of a head with a relational structure is obligatory or not.

To account for the property of the relational nouns, Vergnaud and Zubizarreta (1992), Belvin (1993), and Déchaine, Hoekstra, and Rooryck (1994) propose that these relational nouns select an internal argument.\footnote{See also Chomsky (1970), Anderson (1983-84), Higginbotham (1983), Williams (1982, 1994), and Burton (1995).} In the present l-syntactic framework, the relational property of the relational nouns can be represented in terms of a simplex stative/relational configuration. I propose that a relational noun is a complement of a stative/relational structure whose specifier is the possessor argument. Thus, the underlying l-syntactic structure of (86a) is illustrated in the following:

\[(87)\]

```
         x
        / \n       n   x
      /   /
John  x  z
     /   \\
  child
```

To license the empty head position, the head *child* is adjoined to it, deriving (88):

\[(88)\]

```
         x
        / \n       n   x
      /   /
John  x  z
     /   \\
  child_1, t_1
```

In (88), *child* derivatively heads a stative/relational structure and relates the specifier and itself (its trace). In this representation, there are two semantic components that contribute to the intrinsic/inalienable
possession: the stative/relational configuration and the inherent meaning of *child*. On the one hand, strictly in configurational terms, (88) expresses central coincidence between *John* and *child* (its trace) mediated by *x*. On the other hand, *child* can have a certain semantic property which requires an intrinsic/inalienable relation with some entity. This semantic property could be represented as a feature associated with *child*. This feature is semantically imposed on the stative/relational configuration. By this, the general notion of central coincidence is made more restrictive, giving rise to something like intrinsic/inalienable co-existence or possession. As a result, an intrinsic/inalienable relation is derived. Therefore, in the present analysis, intrinsic/inalienable possession is based on both l-syntactic configuration and the semantic property of a relational head.

The insight of Vergnaud and Zubizarreta (1992) and the other studies cited above was that relational nouns have an internal argument. This internal argument is now formulated in the present theory as a specifier argument of the relational configuration.

Notice that the present l-syntactic system can account for possessive relations in term of the relational configuration irrespective of morphosyntactic realizations, namely, whether the head surfaces as a verb (*have*) or as a noun (e.g. *child*).

For concreteness, I make the following assumptions to capture the morphosyntactic realization of relational nouns. Notice that the configuration and the incorporation involved in the l-syntactic derivation
of relational nouns are identical to those involved in an adjectival configuration such as (89):

\[
\begin{array}{c}
\text{x} \\
\text{y} \\
\text{John} \\
\text{tall} \\
\text{z} \\
\text{t}
\end{array}
\]

I tentatively permit rules of morphosyntactic realization to refer to the type specification of a head. This indeed incorporates a more conventional way of deriving the categorial status from the meaning of a head (e.g. Pinker (1984)). To account for the nominal realization of child in (88), I postulate a condition that a head \( x \) surfaces as a noun when \( x \) occupies the relational head position and \( x \) is an entity. It can be formulated as follows:

\[
(90) \ x \rightarrow \text{N in [spec x complement], where } x \text{ denotes an entity.}
\]

Then, the rule of adjectival realization should be modified as follows:

\[
(91) \ x \rightarrow \text{A in [spec x complement], where } x \text{ denotes a quality.}
\]

3.4.1.3 Inalienable Have

Given the analysis of the nominal intrinsic/inalienable possession, let us turn to verbal inalienable possession, expressed by have. Belvin (1993) points out a generalization that causative have parallels alienable possession whereas experiential have parallels inalienable possession. To see the parallelisms, compare (92) and (93):
According to Belvin, the inalienable possessive construction and the experiential *have* construction in (92) have their subject interpreted as internal to the complement of *have*. By this, Belvin means that in (92b), the subject (*Bill*) is interpreted as coreferential with an argument (*him*) in the complement of *have*. The 'internality' of the subject interpretation may not be evident in (92a), but under the assumption that a relational noun has an internal argument, the internal argument of *nose* is coreferential with the subject *John*. By contrast, both the causative *have* construction and the alienable possessive construction in (93) have their subject interpreted as external to the complement of *have*.

To capture the parallel interpretations in (92), Belvin extends the analysis that relational nouns take an internal argument, to the experiential *have* construction. In other words, Belvin analyzes the experiential *have* construction as an inalienable possessive construction. Thus, the general schema for inalienable construction can be depicted as follows:
(94) \( [\text{NP}_1 [\text{have} \ i_{\text{xp} \ldots \text{pro} \ldots}]] \) \( \) (XP=NP or a small clause)

Through the binding relation, the subject \( \text{NP}_1 \) in (94) is interpreted as internal to the complement of \text{have}.

The complex structure and the binding relation in (94) is readily accommodated in terms of l-syntactic configuration. The complex stative/relational configuration subject to the Specifier Binding Condition gives rise to an adequate structure, as illustrated by the following:

\[
(95)
\]

In the \( y \) projection, a complement \text{nose} is incorporated into the head position and relates itself and the specifier. I have suggested that intrinsic/inalienable possession follows from some inherent semantic property of \text{nose}. Furthermore, the Specifier Binding Condition forces \text{John} to move from the specifier of \( y \) to the specifier of \( x \). (95) means that \text{John} inalienably possesses \text{nose}.

As a consequence of the movement of \text{John}, a binding relation arises between \text{John} and its trace in (95). This derives Belvin's binding analysis. Based on this analysis, the chapters that follow treat the
complex stative/relational configuration as the configuration that derives intrinsic/inalienable possession.

The above analysis of intrinsic/inalienable have can be extended, with some modification, to the following examples discussed in Déchaine (1996):

(96) a. Mary has a hat on.
    b. Mary, has a hat on her.  

The possessive relation that the sentences in (96) express is not simply alienable possession. As briefly pointed out in Déchaine (1996), in order for the sentences in (96) to be true, it is not sufficient for Mary to own a hat; she must be wearing it. In other words, Mary and a hat cannot be separated. Therefore, this relation is a type of inalienable possession.  

Déchaine (1996) postulates the State-over-State configuration for the inalienable-possessive interpretation of (96). The structures with lexical items inserted are illustrated in the following:

(97) a. 

22 It is also possible to label the sentences in (96) as locative, indicating the location of a hat. To put the meanings more precisely, however, (96a, b) are not entirely synonymous. In (96a), the hat is on Mary's head but (96b) only requires that there be contact between Mary and the hat. I put this difference aside.
The upper head is morphosyntactically realized as a verb (*have*) and the lower head as a preposition (*on*). The differences of the sentences in (96) depend on whether *pro* or an overt pronoun is inserted.

Notice that (97a) is not derived via movement. Moving *Mary* from the complement of *y* cannot be triggered to meet the Specifier Binding Condition because it would skip another argument *hat*. Recall that 1-syntactic movement is subject to locality conditions just like s-syntactic movement. The empty category in the complement of *y* can be instead licensed as *pro* because it satisfies Binding Principle B, being free in the local domain (*y* projection) which contains a subject (*hat*) and *pro*.

Inalienable possession is derived from the complex structure in (97), in particular, (i) the relation determined by the projection headed by *on* and (ii) the Specifier Binding Condition. First, the relation between *hat* and *pro/her* is the relation that *on* determines. Since *on* requires physical contact, *hat* must be physically attached to the referent of *pro/her*. And, due to (ii), *Mary* binds *pro/her*. The net result is the
interpretation 'Mary is wearing a hat', inalienable possession.  

At this point, let me address a question that arises as to the structures in (97): why can the bindee be in the complement position, rather than in the specifier position, of y? Consider (98):

(98) 

\[ \begin{array}{c}
\text{DP,} \\
\text{x} \\
\text{Mary} \\
\text{have DP} \\
\text{y} \\
\text{on desk}
\end{array} \]

(98) is more consistent with other structures presented in Chapter 2 in the sense that the bindee is the argument closest to the binder, and thus the binding can be derived via movement. Recall, moreover, that the structure in (95), repeated below, is well-formed:

On the basis of Belvin (1993), Déchaine (1996) further proposes that pros, employed in these examples, seem to be specified for animacy. Déchaine claims that (i) is ill-formed because pro is bound by an inanimate argument:

(i) *The table, has a lamp on pro.

(ii) The table, has a lamp on it.

The present thesis ignores the animacy condition on pros because the pros cannot be so restricted in other constructions that I have presented in Chapter 2.
With respect to the position of the trace of the raised argument, (98) and (99) are identical. Therefore, there seems to be no reason to rule out (98) in l-syntax.

However, (98) should be ruled out for s-syntactic reasons. During the s-syntactic derivation of (98), the transitive verb have needs to check an accusative Case feature. To satisfy this checking requirement in s-syntax, have is adjoined to a head of a functional category F and the trace is raised to the Spec position of F. However, descriptively speaking, a trace cannot occupy a Case position. Thus, the accusative Case feature of the verb have cannot be cancelled and the s-syntactic derivation of (93) crashes in the sense of Chomsky (1995). Therefore, (98) is l-syntactically possible but s-syntactically ruled out.²⁴

This analysis accounts for the well-formedness of (99). In (99), the trace is not checked for accusative Case. Instead, the y projection is realized as the object NP that is checked for accusative Case. Therefore, (99) does not face the problem that (98) does.

²⁴ Another ill-formed example *Mary, has her, on a desk is ruled out by Binding Principle B, with the local domain for her being the main clause.
What about the structure for, say, blue-ish? It is assigned a State-over-State configuration, just like inalienable have, as illustrated in the following:

(100)

(100) is well-formed because the morphosyntactic realization of x is A and A is incapable of Case-checking. Thus, no Case problem arises in the s-syntactic derivation of (100).

3.4.2 S-syntactic Have

The previous section has presented an l-syntactic analysis of various kinds of possession. This section turns to examine s-syntactic configurations that can be assigned to have.

In the spirit of Cowper (1989), Noonan (1992), and Ritter and Rosen (1993), I have associated to have a stative/relational configuration:
I call have in (101) simplex have. With no more semantic content assigned to have, its alienable possessive interpretation is derived by the stative/relational configuration. Have takes arguments because it heads a stative/relational configuration which takes two arguments.

Thus, just like -en, the Functionalization Principle predicts that 'alienable-possessive' have can be an l-functor:

(102) The Functionalization Principle

Purely structural l-syntactic heads, and only these, can be an l-functor.

The s-syntactic configuration projected by the l-functor have must satisfy the Condition of Inclusiveness. Since have projects a spec-head-complement configuration in l-syntax, it does exactly the same in s-syntax. Furthermore, because the l-functor have is still lexical, the l-syntactic spec-head-complement configuration that it projects is subject to the Specifier Binding Condition. These are met in the following structure:
Assuming that have does not impose any selectional restriction on its complement, the complement can be any maximal projection, XP in (103).

We have examined another kind of 1-syntactic have, i.e. intrinsic/inalienable have. Intrinsic/inalienable have is just one kind of have which selects a stative/relational complement. Subject to the Specifier Binding Condition, the derived complex configuration looks like (104):

For the sake of exposition, I call have heading the upper head in (104) complex have. As shown in the previous section, the interpretation of inalienable/intrinsic possession depends on the property of the lower head y in (104). When y is headed (derivatively) by a relational noun like nose, (104) gives rise to a sentence such as John has a big nose, which denotes intrinsic/inalienable possession. When y is headed by on, (104) yields a sentence such as Mary has a hat on, which also denotes (a kind
of inalienable possession. Complex have itself is associated with no inherent semantic content except its relational property.

If y, as well as have, is specified for no semantic features in (104), the Functionalization Principle predicts that the two heads can be l-functors. The two l-functors give rise to the following s-syntactic structure:

(105)

Thus, the present theory of l-functors predicts that the two l-functor configurations (103, 105) are available in the English syntax.

There are two crucial differences between (103) and (105). First, the position of the bindee is different. In (103), the bindee is the Spec of the lower phrase whereas in (105), the bindee is the complement of the lower phrase. Second, the status of the lower phrase is different. In (103), the lower phrase is any XP whereas in (105), the lower phrase is an l-functor phrase.

Based on the above analysis of the l-functor have, the rest of this section gives a principled account of the essential properties of English periphrastic experiential/causative constructions such as those in (106):

(106) a. John had his student walk out of the classroom.
    b. John had three people drop in the office.
I demonstrate that Belvin's generalization discussed in section 3.4.1.3 follows from the present theory that allows the s-syntactic insertion of have, which can be associated with either (103) or (105). I show that (103) derives the causative interpretation of the periphrastic constructions while (105) results in the experiential interpretation. The theory also captures the significance of the binding relation in the experiential construction.

During the discussion of the periphrastic causative construction, I take up a related issue: the interaction of have and v.

3.4.2.1 Ritter and Rosen (1993)

Consider the following ambiguous sentence:

(107) John had his students walk out of class.

(107) has either a causative reading (paraphrased as (108a)) or an experiential reading in which the subject argument experiences an action denoted by the VP (paraphrased as (108b)):

(108) a. John made his students walk out of class.

    b. John experienced a situation in which his students walked out of class.

To capture the ambiguity, Ritter and Rosen (1993) assume, as do Cowper (1989), Noonan (1992), and others, that have is associated with no θ-roles. This verb, Rittern and Rosen continue, adds an extra participant to the event or state denoted by its complement. By doing so, the verb extends the duration of the event denoted by its complement in two
ways: either the beginning point is pushed back or the endpoint is opened up.

Ritter and Rosen (p. 525) claim, based on a theory of aspectual organization, that the argument corresponding to the beginning point of an event is the causer of the event. In contrast, when an argument pushes back the end point of an event, the argument functions as what Ritter and Rosen call the experiencer. Thus, in (107), *John* may be assigned either the causer role or the experiencer role.

With respect to structure, Ritter and Rosen argue that *have* selects VP. Thus, they assign to the sentence *John had his students walk out of class* the following structure:

(109) 
```
  IP
   /\ 
  I'  
   /\ 
  I   VP
   /\ 
  DP  V'
   /\ 
  John V  VP
   /\  /\ 
  have DP V' PP
   /\  
  his students walk out of class
```

While Ritter and Rosen's analysis seems to be on the right track, they do not capture the binding relation that holds in the *have*-VP
The presence/absence of this binding relation is in the following:

(110) a. John, had his student walk out on him.
   
   b. John, had his student walk out on him, (i ≠ j)

(110a) is ambiguous between the causative and the experiential interpretations. (110b), however, is unambiguous: it only has the causative interpretation. This means that the binding relation is inherent in the experiential reading but optional in the causative interpretation. This does not follow from Ritter and Rosen’s analysis. In sections to follow, I examine how the present analysis of *have* derives the ambiguity of the *have*-VP construction and the binding relation essential to the experiential interpretation.

### 3.4.2.2 Experiential Interpretation: S-syntactic Complex Relation

First, I show that the experiential interpretation of the *have* VP construction is derived from the complex configuration in (105). This captures Belvin’s parallelism between the intrinsic/inalienable possession and the experiential interpretation.

Notice that the experiential *have* VP construction may contain what Ritter and Rosen (1993) call an ethical dative, as in the following examples:

---

25 In their footnote 6 (p. 526), Ritter and Rosen remark that they do not fully understand the binding condition imposed in the experiential interpretation. Belvin (1993) in contrast argues for the significance of the inalienable possessive relation in the experiential construction.
(111) a. Jane had all the undergrads walk out on her.
b. Ralph had Sheila die on him.
   
   (Ritter and Rosen (1993: 526-527))
c. John had the car break down on him. (Inoue (1995:75))

These examples are virtually synonymous with the counterparts without an ethical dative. (111) can be accounted for by the complex 1-functor structure given in (105), in which the 1-functor have takes as a complement another relational 1-functor projection (F₂P) headed by on, as in the following:

In (112), F₂P has vP as a kind of 'clausal' subject. In this respect, I am following Déchaine, Hoekstra, and Rooryck (1994) (see also den Dikken

---

²⁶ P is like a functional category in the first place. For example, it is a closed (i.e. non-productive) category.
(1995) for the same kind of structure). The vP subject violates no principles. Moreover, since a propositional argument (CP/IP) can assume subject function (e.g. That John hadn’t come back yet worried his mother), it is natural that vP can also assume the subject function.\(^{27}\)

The Specifier Binding Condition imposed on have is satisfied in (112) through binding of an overt pronominal him by the Spec of have. In this case, no movement is possible from the complement of F\(_2\) (on) to the Spec of F\(_1\) (have) since it skips the Spec of F\(_2\).

The interpretation of (112) is derived in a compositional way. At the F\(_2\)P level, the event of students walking out of class denoted by vP is related to the referent of him.\(^{28}\) The relation is central coincidence. Since the relation holds in this example between a (sentient) human and an event, a most natural (less abstract) interpretation of central coincidence would be experience. When a human being and an event co-exist, he/she can experience an event but cannot possess or own it. Therefore, F\(_2\)P means that the referent of him experiences the event denoted by vP.

At the F\(_1\)P level, John is related with the denotation of F\(_2\)P. Because John binds him due to the Specifier Binding Condition, it follows that John is the person who experiences the event denoted by vP. The derived interpretation of (112) is, therefore, that John has a relation of central coincidence with the relation denoted by F\(_2\)P in which John

\(^{27}\) Cf., however, Koster (1978) for arguments against sentential subjects.

\(^{28}\) The Specifier Binding Condition is irrelevant to F\(_2\)P. This condition applies if the complement of a relational 1-functor is complex but in (112), F's complement corresponds to an entity, which is 1-syntactically simplex.
experiences the event of students walking out of class. One traditional
way of interpreting this complex relation is that John experiences an
event denoted by \( vP \).

In (112), \( on \), the \( F_2 \) head, is an \( l \)-functor. Thus, it is void of (non-
structural) semantic content. This \( l \)-functor analysis of \( on \) in (112) seems
to be correct because the \( l \)-functor projections in (112) do not yield the
strictly inalienable-possessive (physical contact) interpretation as \( on \) in
\( Mary \ has \ a \ hat \ on \) does. What \( on \) does in (112) is derive the proper
binding relation that leads to the experiential interpretation. The present
analysis captures Belvin's parallelism between the intrinsic/inalienable
possessive construction and the experiential \( have \) construction by
associating both constructions with the complex relational
configuration.

As I have noted earlier, the experiential \( have \) VP construction with
an ethical dative is synonymous to the counterpart without an ethical
dative. Under a working hypothesis that thematically related
constructions are structurally related, it is most natural, with other
conditions being equal, to assume that the experiential \( have \) VP
constructions are assigned the same structure whether it has an overt
ethical dative or not. Thus a sentence such as \( John \ had \ his \ students \ walk
out of class \) is associated with the same structure as (112) except that \( F_2 \)
and its complement are phonologically empty:\(^{29}\)

\[(113)\]

\[
\begin{array}{c}
\text{IP} \\
\downarrow \\
I' \\
\downarrow \\
I \\
\downarrow \\
F,P \\
\downarrow \\
DP_1 \\
\downarrow \\
\text{John} \\
\downarrow \\
\text{have} \\
\downarrow \\
DP \\
\downarrow \\
\text{his students} \\
\downarrow \\
V \\
\downarrow \\
\text{walk out of class}
\end{array}
\]

The appearance of the overt pronominal \textit{him} in (112) supports the appearance of \textit{pro} in the complement of \(F_2\).

This analysis has the consequence that the possessive relation

\(^{29}\) A question arises, however, why the spell-out of \(F_2\) is \textit{on} in the experiential \textit{have} construction. L-syntactic \textit{on} has inherent semantic content, physical contact.

There is another question raised about \(F_2\) \textit{on}. For some unclear reason, when \(F_2\) is spelled out as \textit{on}, its complement must be an overt pronoun. The complement cannot be empty, as illustrated in the following:

(i) *John had all the undergrads walk out \textit{on}.
(ii) *Bill had the car break down \textit{on}.

In this respect, the parallelism between the experiential \textit{have} VP construction and the inalienable possession construction in (iii) does not hold:

(iii) Mary has a hat \textit{on}.

I leave these questions open.

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between the subject argument \textit{(John)} and the object argument \textit{(his student)} does not necessarily hold, because no principle forces the binding relation between \textit{John} and \textit{his} in \textit{his student}. Therefore, the relation between \textit{John} and \textit{his students} can be indirect. For example, the students may be some other professor's students, as in the following example:

(114) John, had Bill's students walk out of class on him.

The present analysis derives all the crucial properties of the experiential reading of the \textit{have} VP construction. In this analysis, \textit{s}-syntactic structure derives the effects of the informal aspectual analysis proposed by Ritter and Rosen (1993) and Belvin's (1993) generalization.\(^{30}\)

\subsection{3.4.2.3 Causative Interpretation: \textit{S}-syntactic Simplex Relation}

The present analysis of \textit{have} makes an additional prediction that a head of a simplex stative/relational configuration can also be an \textit{1}-functor, as in (103), repeated below as (115):

\(^{30}\) Michael Rochemont (p. c.) raises a question concerning extraposition out of the \textit{vP} specifier of \textit{F}_2\textit{P}. Consider (i):

(i) Jason had [Monica practice the piano t, ] \textit{on him} [before she went out to play].

(i) is well-formed but the extraposition of the temporal adjunct should be bounded. I leave the question for future research.
In this section, I show that when X is v, the configuration in (115) derives the causative interpretation of the 

\[ \text{have} \] VP construction. I also show that simplex \text{have} as an 1-functor is closely related to the causative interpretation of the \text{have} VP construction but not directly. I demonstrate that \text{have} licenses v, which is the direct source of the causative interpretation.

### 3.4.2.3.1 Indirect Causation

Consider additional examples:

(116) a. David had Sam wash behind his ears.

b. Jason had Monica practice the piano before she went out to play.

(Ritter and Rosen (1993: 524))

In (116a), the object argument Sam is the direct causer (or agent) of the event of washing behind his ears. The subject argument David is the indirect causer that induces Sam's washing event. Based on this observation, I suggest a notion of \textit{indirect causation}. With reference to a direct causer of an event \( E_2 \), an indirect causer can be defined as follows:
(117) An argument is an indirect causer iff it causes an event $E_1$ in which a direct causer causes an event $E_2$.

This notion of indirect causation implies the existence of direct causation. Thus, in (116a), David is an indirect causer of an event $E_1$: Sam's washing behind his ears. $E_1$ has a direct causer Sam which causes an event $E_2$: washing behind his ears.

In the present analysis in which the direct causer (Sam) is structurally represented as the Spec of vP, it is natural to extend the Spec of vP to all causer arguments including the indirect causer. Thus, I treat indirect causation as involving a second vP. Then, the causative interpretation of John had his student walk out of class can be associated with the following structure:

(118) $\begin{array}{c}
\text{DP} \\
v \\
v' \\
vP \\
\text{vP} \\
\text{DP} \\
v' \\
\text{VP} \\
\text{VP} \\
\text{V} \\
\text{PP} \\
\text{walk} \\
\text{out of class}
\end{array}$

It is necessary for DP in the Spec of the higher vP in (118) to be identified as the indirect causer which causes the event denoted by the lower vP. To obtain this effect, I need to revise the structural definition of causation because the causative interpretation is thus far assigned to a v-VP configuration but not to a v-vP configuration. Recall that v is not
causative by itself in the present framework; \( v \) without a Spec is spelled out as a variant of \( be \).

In Chapter 2, I have generalized the range of \( v \) to the extent that it may be realized as a copula when it lacks a specifier. Capitalizing on the presence/absence of \( v \)'s specifier, it is possible to generalize the causative configuration to a Spec-\( v \)-XP configuration (cf. footnote 67 in Chapter 2 and Harley (1995)). Then, the \( v \)-vP configuration in (118) qualifies as a causative configuration because the higher \( v \) has a specifier. Since the \( v \)-vP configuration induces another causative event associated with the \( v \)-VP configuration, it is interpreted as indirect causation.

However, (118) is still ill-formed for an independent reason. Unlike in the other examples that we have examined, the verbal feature associated with the upper \( v \)P cannot be checked in (118). Thus, the derivation of (118) crashes as it stands. Compare it with the verbal feature associated with the lower \( v \), which can be checked by the feature associated with the verb \( walk \) when \( walk \) is adjoined to the lower \( v \).

There is, however, a strategy available in English to 'save' (118): building simplex \( have \) projection on top of (118). I turn to it in the next section.

**3.4.2.3.2 \( v \)P and Simplex \( have \)**

When a structure of simplex \( have \) is projected on (118), the following structure is derived for \( John \ had \ his \ students \ walk \ out \ of \ class \):
L-functor *have* can be s-syntactically inserted into the above position when it projects a Spec-head-complement structure, satisfying the Condition of Inclusiveness. Furthermore, the Specifier Binding Condition must be satisfied in (119) because the lexical head *have* selects a complex complement.\(^{31}\) The condition requires that the Spec of *have* attracts an argument of the upper \(vP\), namely, *John* in (119), giving rise to the required binding relation.

The \(v\)-VP configuration denotes direct causation while the \(v\)-\(vP\) configuration denotes indirect causation. Therefore, the interpretation of the structure in (119) is that John is in a central coincidence relation

\(^{31}\) The configuration headed by *have* in (119) has to be differentiated from the configuration associated with what I am calling complex *have*, which selects a stative/relational complement.
with an event in which John causes another event denoted by the lower vP. This is the essence of the causative interpretation of the have VP construction.

In this analysis, have is related only indirectly with the causative reading. The (indirect) causative meaning is determined by the upper vP but not by have or its structural properties. However, have plays a crucial role in licensing the otherwise impossible occurrence of multiple vPs. As I have pointed out at the end of section 3.4.2.3.1, the feature associated with the upper v cannot be checked in the recursive vP structure (119). Have licenses the upper v when v is adjoined to have, a functional category, and their features are checked against each other. The analysis therefore imposes a restriction on recursive vPs in terms of feature checking.

Ritter and Rosen (1993) presuppose structural identity between the experientially interpreted structure and the causatively interpreted structure. Departing from them, I have proposed an analysis that is based on finer-grained structural relations, in which syntactic structure is the direct source of each interpretation. This is in accordance with the spirit of the l-syntactic framework.

The above analysis of the causative interpretation of the have VP construction is based on a simplex have l-functor. We have one more possible l-functor structure, namely, the structure headed by complex have (together with another relational l-functor). It is thus necessary to see whether the complex have configuration is compatible with the
indirect causative structure. If complex *have* is combined with the indirect causative structure, it would give rise to the following structure:

\[(120)\]

Because the Specifier Binding Condition forces the Spec of *have* (*John*) to bind an argument of \(F_2\), the complement of \(F_2\) (*pro*) is bound. Movement is not a possible option to obtain the binding relation in this example because the complement of \(F_2\) must skip the Spec of \(F_2\).

In the structure, *pro*\(^*\) in the upper \(\text{vP}\) is left unbound. Thus, the interpretation would be that John has a certain relation with an event in which someone caused an event in which the students walk out of class. This is not the interpretation of the sentence *John had the students walk out of class.*
Indeed, the derivation of (120) crashes. Although the verbal features associated with $F_2$ and $v_2$ are checked against those associated with *have* and *walk*, respectively, the verbal feature of $v_1$ cannot be eliminated because there is no verbal element that can check the feature of $v_1$.

### 3.4.2.3.3 Indirect Causation and Non-causative Verbs

The notion of indirect causation associated with the upper $vP$ in the multiple $vP$ construction captures the fact pointed out by Ritter and Rosen (1993: 526-528) that the *have* $VP$ construction cannot be causatively interpreted when a non-causative verb is embedded:

(121) Unaccusative

a. *Ralph had Sheila die.

b. *Ralph had his goldfish die.

c. *Ralph had Sheila fall down.

d. *Ralph had the plants grow.

e. *The warm sunshine had the plants grow.

(122) Middle

a. *The general has his boats sink easily.

b. *The baker had his bread cut easily.

c. *Bill has these pots leak all the time.

(123) Inchoative

a. *The general had the boat sink.
b. *Bill had the pot leak all over the floor.

Recall that indirect causation implies direct causation:

(124) An argument is an indirect causer if it causes an event $E_1$ in which a direct causer causes an event $E_2$.

In structural terms, indirect causation is associated with a higher vP that contains a vP that denotes direct causation. In standard analyses, however, unaccusative, middle, and inchoative verbs inherently lack causative reading. In the 1-syntactic theory, this means that these verbs lack the $[\_v, v\text{-VP}]$ configuration. It follows, therefore, that a higher vP that denotes indirect causation cannot be projected on the structure headed by these verbs.\(^{32}\)

### 3.4.3 Summary: Have

Section 3.4 has dealt with various issues that center around possession. I have proposed an 1-syntactic account of various types of possession and an 1-functor analysis of *have, on, and empty stative/relational heads which has a wide range of ramification in s-syntactic structure.

\(^{32}\) Hale and Keyser (1993) suggest a causative analysis of middles and Chierchia (1989) proposes a causative analysis of unaccusatives. Even if they are on the right track, it is evident that causer arguments in middles and unaccusatives do not behave like causer arguments of the causative verbs. For example, causes in middles and unaccusatives cannot license an agentive *by*-phrase but causes of passivized causative verbs can. In the present analysis, therefore, I take the relevant notion of causes in the traditional sense, excluding the causes in middles and unaccusatives in the references above.
My l-syntactic analysis of possession can be summarized as follows. First, following Hale (1986), I have identified alienable possession as a default interpretation of central coincidence between entities. Central coincidence is the relation that holds between a specifier argument and a complement of the stative/relational configuration in (125):

(125)  
\[ \text{spec} \quad \text{x} \quad \text{compl} \quad \text{have} \]

Second, I have accounted for the property of relational nouns such as child and nose. Their intrinsic/inalienable possessive relation is based on two elements: the stative/relational configuration and the inherent semantic property of relational nouns. Their possessive relation is determined by the following configuration:

(126)  
\[ \text{John} \quad \text{child}_t \quad t_i \]

In the stative/relational configuration (126), child relates its trace and the specifier argument. Just as in (125), (126) gives the relation of central coincidence between John and child. Child is, however, different from purely structural have; it has some (inherent) semantic feature that forces intrinsic/inalienable relation.
Third, combining (125) and (126), I have derived the intrinsic/inalienable interpretation of sentences such as John has a big nose and Mary has a hat on (her). The latter, for instance, is assigned the following structure:

\[
\begin{array}{c}
\text{Mary} \\
\text{have} \\
\text{hat} \\
\text{on pro/,her,}
\end{array}
\]

In (127), the inalienability hinges on the inherent semantic property of the lower head y. The binding, which is ensured by the Specifier Binding Condition, derives the effect that the relation required by on holds between Mary and a hat.

Turning to s-syntax, I have argued for the theory of l-functors that purely structural l-syntactic heads like have can be inserted in s-syntax as an l-functor. I have shown, in the spirit of Belvin (1993), that the experiential/causative contrast of the English have VP constructions is derived from the inalienable/alienable contrast of l-syntactic configurations. The Functionalization Principle and the Condition of Inclusiveness predict that the following l-functor structures are available in English:

\[
(128) \text{a. Experiential have VP:}
\]

based on complex have (and on)
b. Causative *have* VP:

based on simplex *have* and indirect causation

I have also demonstrated that the distribution of 1-functors is properly restricted by the theory of feature checking, which derives the restriction on *vP* recursion.

3.5 Further Interactions among *v*, *Have*, and *-En*

Thus far, I have examined the predicted independent appearance of *-en* and *have* as 1-functors in s-syntax and their interaction with *v*. In addition to these patterns, the present theory makes further predictions: that both *-en* and *have* may appear in s-syntax in the same construction.
and that the two further interact with \textit{v}. I show in this section that these predictions are borne out in English.\footnote{See footnote 52 for some predictions that are not discussed in the main text.}

The simultaneous appearance of \textit{-en} and \textit{have}, with or without interacting with \textit{v}, is observed in constructions of the surface form \textit{have} DP V-\textit{en} and the perfect construction, as illustrated by the following examples:

(129) a. John had his wallet stolen.
     b. Mary had her son slapped.

(130) Mary has advised the prime minister.

Section 3.5.1 examines the \textit{have} V-\textit{en} construction in (129) which gives rise to experiential and causative interpretations. Given the present theory of \textit{l}-functors and the analysis of multiple \textit{vP}, the ambiguity of the construction follows.

Section 3.5.2 turns our attention to the perfect construction. I show that the two \textit{l}-functors \textit{-en} and \textit{have} give rise to the perfect construction.

### 3.5.1 Have+S-syntactic -En

A prediction of our theory is that the \textit{l}-functor \textit{-en} should cooccur with the \textit{l}-functor \textit{have}. The prediction is borne out by the \textit{have} V-\textit{en} construction in (129), repeated in (131):

(131) a. John had his wallet stolen.
b. Mary had her son slapped.

The examples in (131) have the following properties. First, the 'small clause' complement of have has a passive-like interpretation: an event/state denoted by the participle is caused by somebody/something which is referentially distinct from either the subject of the small clause or the subject of the main clause. Second, these sentences are ambiguous between the experiential and the causative interpretations. (131a), for instance, may mean either that John caused someone to steal a wallet or that John's wallet was stolen, which affected John. Third, the experiential interpretation has a binding relation between the subject and an (implicit) argument. The latter argument may be overt as in (132):

(132) John, had his savings wiped out on him,. (Inoue (1995: 75))

This property is not necessarily shared by the causative interpretation. I show that these three properties follow from the s-syntactic configurations associated with the l-functors -en and have.

3.5.1.1 Experiential Interpretation

Let us examine how the have V-en construction yields an experiential interpretation. First, consider the small clause complement of have. It should be assigned the structure of s-syntactic passives because the complement permits an agentive by-phrase, as in the following examples:

---

34 I use the term 'small clause' for convenience to refer to the DP V-en sequence that follows have.
Recall that I have assigned s-syntactic passives the following structure:

\[
(134) \quad FP \\
\quad \quad \text{pro}_j \\
\quad \quad F' \\
\quad \quad F \\
\quad \quad vP \\
\quad \quad \quad \text{-en \_t} \\
\quad \quad \quad v' \\
\quad \quad \quad V \\
\quad \quad \text{DP}_k \\
\text{steal his\textsubscript{1} wallet}
\]

In (134), the l-functor \text{-en} selects \text{vP} and the Spec of \text{vP} (agent/causer) is raised to the Spec of \text{FP} to satisfy the Specifier Binding Condition. Although a precise formulation remains to be made, I assume that the covert agent/causer argument (\text{pro}, \_t) licenses a by-phrase. Thus, (134), assigned to the passivized complement of (133a), accounts for the well-formedness of (133a).

The structure in (134), does not yet properly reflect the surface word order of the passivized complement of (133a), in which the argument \textit{his wallet} is raised to the complement-initial position. I take this raising as triggered by feature checking. For concreteness, I tentatively assume that \text{-en} is specified for a strong feature [+F].

\[\text{The analysis of the s-syntactic movement of \textit{his wallet} obviously needs an explanation. The problem is related to a general problem in a minimalist approach. Consider DP movement in infinitival passives such as (i):} \]

\[\text{(i)}\]

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feature can be checked if *his wallet* is specified for [+F] and adjoined to F₃P, giving rise to a multiple-Spec structure as in (135):

(135) reflects the surface word order of the complement in (133a) in which *his wallet* is preposed.

Let us move on to the main clause. It seems that the ambiguity of the *have V-en* construction parallels the ambiguity of the *have VP* construction that we have seen in section 3.4.2 (e.g. *John had his students walk out of class*). The ambiguity of the *have VP* construction has been accounted for by associating the experiential interpretation with complex *have* and the causative interpretation with simplex *have*. This analysis can be directly extended to the ambiguity of the *have V-en* construction.

(i) John believes Mary to be elected president.
In a minimalist approach, there is no obvious reason for *Mary* to be raised to the Spec of the infinitival IP. See Chomsky and Lasnik (1995) for discussion.

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Thus, the experiential interpretation of the *have V-en* construction can be accounted for by the complex 1-functor projection headed by *have* and an empty stative/relational 1-functor or *on*, schematized as follows:

(136) \[
\begin{array}{c}
F_1P \\
\downarrow \leftarrow \\
DP_1 \\
\leftarrow \\
F_1' \\
\downarrow \leftarrow \\
F_2P \\
\downarrow \leftarrow \\
\text{have} XP \\
\downarrow \leftarrow \\
F_2' \\
\downarrow \leftarrow \\
vbl \text{ (on)} \\
\end{array}
\]

In the analysis proposed in section 3.4.2.2, XP in (136) is *vP* in the *have* VP construction. Instead of *vP*, however, the *have V-en* construction employs an 1-functor phrase headed by *-en*, namely, the structure in (135). Building (136) on (135), the derivation gives rise to the following structure when $F_2$ is empty:
The functional heads in (137) all can have their features checked. The features of empty ones, $F_2$ and $v$, can be checked against those of \textit{have} and \textit{stolen}, respectively.

Semantic composition in (137) gives rise to the experiential interpretation of (133a) \textit{John had his wallet stolen}. $F_3P$ denotes an event $E$ in which someone ($\textit{pro}_j = t_j$) steals a wallet. At the $F_2P$ level, event $E$ is related with $\textit{pro}_i$. The relation is central coincidence. A most natural interpretation of central coincidence in this case would be that $\textit{pro}_i$ experiences event $E$. At the $F_1P$ level, the denotation of $F_2P$ is related to \textit{John}. Because \textit{John} binds $\textit{pro}_i$ due to the Specifier Binding Condition, it
follows that John is the person who experiences the event denoted by $F_3P$. The derived interpretation of (137) is, therefore, that John is in a relation of central coincidence with the relation denoted by $F_2P$ in which John experiences event $E$. One traditional way of interpreting this complex relation is that John experiences an event in which John's wallet is stolen. Since the trace in the Spec of $vP$ is referentially independent from John in the Spec of $have$ in (137), it follows that John is not the person who stole the wallet in the experiential interpretation.\footnote{It is logically possible that in (137), John in the Spec position of $have$ and $pro$ in a Spec position of $F_3P$ are accidentally coindexed. If so, John binds the trace in the Spec position of $uP$, and the structure would give rise to the causative interpretation. I leave open the questions of whether this accidental binding should be ruled out and, if so, how to rule it out.}

The binding relation characteristic of the experiential interpretation is satisfied by $pro$ in the complement position of $F_2P$. When $F_2$ surfaces as $on$, it properly accounts for an ethical dative version of the $have$ $V$-$en$ construction such as (132) John, had his savings wiped out on him.

3.5.1.2 Causative Interpretation

Let us turn to the causative interpretation of the $have$ $V$-$en$ construction. In the analysis proposed for the $have$ $VP$ construction in section 3.4.2.3, its causative interpretation is attributed to the binding relation in the following structure headed by an 1-functor $have$: 
The binding, forced by the Specifier Binding Condition, identifies the subject of *have* as the indirect causer, a specifier argument of the upper vP.

I make a natural extension of this analysis to the causative reading of the *have* V-en construction. In this construction, *have* selects a passivized phrase instead of vP. Therefore, I replace the lower vP in (138) with the 1-functor phrase headed by -en to derive the causative *have* V-en structure. Thus, our example *John had his wallet stolen* in (133a) is assigned the following structure:
In this structure, \( v_2 \) is responsible for the direct causative/agentive meaning that somebody (\( \text{pro} \)) does stealing. The indirect causative reading is derived from the Spec-\( v_1 \)-\( F_2 \)P configuration, which conforms to the generalized causative configuration: Spec-\( v \)-XP.

The representation in (139) correctly accounts for the referential properties of the causative interpretation. First, the indirect causer is \( \text{John} \) (the raising is triggered by the Specifier Binding Condition). Second,
nothing in (139) forces a possessive relation between John and his wallet. The theory predicts, therefore, that his in John had his wallet stolen may be coreferential with John or somebody else under the causative interpretation. The prediction is correct.

As in the have VP construction, have does not directly derive the causative interpretation (indirect causation) of the have V-en construction. Have instead licenses $v_1$ by means of being a feature checker of $v_1$. In (139), there is nothing that is incorporated into $v_1$ since the head movement in the F$_2$P level stops at F$_2$. Thus, $v_1$ is forced to move to F$_1$. Hence, (139) is 'saved' by have.

To summarize, we have examined the have V-en construction and verified a prediction of the present theory that l-functors -en and have should cooccur. We have also seen that in addition to -en and have, another l-functor $v$ is integrated in the causative version of the have V-en construction. The pattern is exactly as in the have-VP construction we have examined in section 3.4.2. I have also shown that multiple vPs are permitted only in a context where $v$ is properly licensed in terms of feature checking.\footnote{The higher vP is incompatible with complex have for the same reason as in the have VP construction (section 3.4.2.3.2; (120)): the higher $v$ is not feature-checked.} \footnote{A predicted cooccurrence of simplex have and complex have is ruled out for s-syntactic reasons. While they are both verbal morphosyntactically, only one have can bear tense feature.}

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3.5.2 Perfect Constructions

This section turns to the English perfect construction, another construction that bears out the prediction that 1-functors -en and have cooccur. To examine the prediction, it is first necessary to show that a perfect participle is headed by the same morpheme as the one that heads a verbal passive participle. In section 3.5.2.1, I recapitulate significant leading ideas that are shared by some analyses reviewed in section 3.2. Section 3.5.2.2 shows that the perfect construction is accounted for by the interaction between the 1-functors have and -en. The analysis shows that the contribution of have is not only Case-theoretic but also (lexical) semantic. In section 3.5.2.3, incorporating the leading ideas in the present framework, I address the Case-theoretic relevance of have in the perfect construction.

3.5.2.1 Leading Ideas of the Previous Analyses

Let me summarize the important leading ideas that have emerged in the review in section 3.2. First, the central idea is that the passive morpheme and the perfect morpheme share crucial properties. Except for Fabb (1984), who only considers Case-marking, and Cowper (1995), who associates two distinct structures with the passive/perfect morpheme, the rest of the analyses discussed share the strongest version of this hypothesis, namely, that the passive morpheme and the perfect morpheme are in fact one and the same morpheme, with all crucial
properties identical: in both constructions, the passive/perfect morpheme suppresses an external \( \theta \)-role and 'absorbs' the accusative Case of the head verb.

Second, the perfect auxiliary have is a two-place predicate (without assigning \( \theta \)-roles) and helps to check the accusative Case feature of the internal argument, though its exact formulation varies from analysis to analysis. Hoekstra (1986) and Cowper (1995) address an important issue: have and the participle 'share' the same subject in the perfect construction.

These ideas can be summarized in terms of \( \theta \)-Theory and Case Theory. From a \( \theta \)-theoretic point of view, the following claims have been defended:

(140) a. \(-\text{En}\) suppresses an external \( \theta \)-role in both passive and perfect constructions.

b. \(\text{Have}\) is a two-place predicate.

From a Case-theoretic point of view, the following claims have been made:

(141) a. \(-\text{En}\) 'absorbs' a verb's accusative Case.

b. \(\text{Have}\) causes an internal argument to be Case-checked.

In terms of the checking theory, (141a, b) can be unified and restated as follows:

(142) \(-\text{En}\) and have participate in accusative Case checking.
In the next section, I demonstrate that (140a) automatically follows in the present theory under the assumption that the passive and perfect constructions both involve the same -en. (140b) is a direct consequence of our assumption that it is a stative/relational head. In section 3.5.2.3, I turn to the Case properties in (141) and consider them from a minimalist point of view.

3.5.2.2 L-functor-based Analysis of the Perfect Construction

3.5.2.2.1 Perfect Auxiliary Have and Its Structure

Following the basic insights of the analyses reviewed above, I propose that the l-functor -en in the structure proposed for verbal passives in (143) functions as the perfect morpheme as well:

(143) FP
    /\ Spec₁
   /\ F'
  /\ f P
 \\ Spec₁ \n    -en Spec₁ v'
        v  VP

To determine what structure is built upon (143), let us consider two properties of the perfect construction that must be accounted for. First, in this construction, the subject of have must be identified with the subject of the participle:

(144) a. John, has [DP₁ stolen Mary's wallet]
b. *John, has [DP \_ stolen Mary's wallet] (i \( \neq \) j)

This is a general condition that holds when a first verbal element (*have*) is an auxiliary (see, e.g. Cowper (1995)). The coreference between two independent arguments is, however, not sufficient to capture the property of auxiliaries. Consider the following examples:

(145) John, had [himself, steal Mary's wallet]

In (145), coreference holds between John and himself but *have* is not an auxiliary (e.g. *Had John himself steal Mary's wallet/*John had not himself steal Mary's wallet). Contra Cowper (1995), the proper condition seems to be that the subject of an auxiliary and the subject of a main verb must form a chain (as in Hoekstra (1986)). Let us call this the subject chain condition. This condition is not met in (145) because *John* and *himself* do not form a chain. Then, given this condition, we need to reconsider the structure (145a): instead of a control structure, the auxiliary *have* must have a raising structure.39

The second property of auxiliaries, related to the first, is that the subject of the auxiliary is a direct causer. This contrasts with the indirect causation observed in the causative *have V-en* construction (e.g. *John had Mary's wallet stolen*).

This contrast in causation should follow in my analysis from the presence/absence of a second vP. The perfect construction thus has only one vP which denotes direct causation when it selects VP. Therefore, in

39 The subject chain condition might be too strong to hold of root modals. In a traditional analysis, the epistemic-root contrast is derived from the raising-control distinction. I leave the issue aside.
the perfect construction no vP is built on (143), as in the have V-en construction.

The subject chain condition is crucial in order to determine the higher structure of the perfect construction. Recall that the present theory has two kinds of have 1-functors, complex (inalienable) and simplex (alienable) have's. In sections 3.4 and 3.5.1, I have demonstrated, on the basis of Belvin's (1993) insight, that the two kinds of have explain the causative and experiential properties of the periphrastic have constructions. It seems, however, that the perfect construction is not associated with two interpretations that correspond to the causative and experiential interpretations. It seems, therefore, that there is only one type of have in the perfect construction.

The two kinds of have would give rise to two structures given in (145). (145a) is yielded if complex have (with another 1-functor F₂) is employed while (145b) is the underlying structure if simplex have is used:⁴⁰

---

⁴⁰ I simplify the VP-internal structure although in the present 1-syntactic framework, the VP-internal structure can be more complex than V-DP.
To determine which is the appropriate structure for the perfect construction, notice that the subject chain condition is not met in (146a) but it is in (146b). In (146a), the subject of have and the subject of \( v \) do not form a chain. In (146b), by contrast, the subjects of have and \( v \) do form a chain. These binding patterns follow from the Specifier Binding
Condition imposed on *have* and *-en*. Therefore, the subject chain condition is satisfied only by simplex *have* in (146b). Therefore, (146b) must be the structure for the perfect construction.

Let us elaborate more on the relation between an auxiliary and the subject chain condition. A crucial aspect of the subject chain condition seems to be that the condition ensures that an auxiliary does not extend an event of a main verb (or a participle). Event extension is discussed by Ritter and Rosen (1993). The essence of their claim is that non-auxiliary *have* extends an event by introducing an extra argument. In the periphrastic *have* constructions, an event may be extended by the introduction of an indirect causer (*Mary* in (147a)) and of an experiencer (*John* in (147b)):

(147) a. Mary had Bill decorate the cake.
    b. John, had his student walk out of class on him.

In the perfect construction, by contrast, an event denoted by a main verb is not extended because the specifier argument of *have* forms a chain with the subject of the main verb. This view is consistent with the lack of a second (indirect causative) vP in the perfect construction.

In light of eventuality extension, we could distinguish a full (i.e., non-auxiliary) verb and an auxiliary. It generally holds that a verb is a full verb when it denotes a certain eventuality (or is assigned an event role). In addition, if Ritter and Rosen (1993) are right, periphrastic *have*

---

41 Instead of 'event', I use the term 'eventuality', which is a cover term for all aspectual types, as in Bach (1981).
is a full verb because it extends an eventuality even though *have itself does not denote an independent eventuality. It is quite plausible to assume that other verbal elements that fail to satisfy these two conditions are auxiliaries. I formulate this as follows:

(148) Auxiliary Generalization

A verb is an auxiliary iff it neither denotes an independent eventuality nor extends an eventuality that a full verb denotes.

*Have in the perfect construction seems to satisfy (148). First, perfect *have does not extend an eventuality because it does not introduce an extra argument: the Spec argument of perfect *have always forms a chain with the subject of a full verb. To put this in other words, when the subject chain condition holds, eventuality extension does not take place. Thus, (148) in effect incorporates the subject chain condition as part of the definition of the auxiliary. Second, perfect *have does not denote an independent eventuality. For example, while *try can license a modifier because it denotes an independent eventuality, *have cannot do so:

(149) a. John quickly tried to decorate the cake quickly.

b. *John softly has decorated the cake quickly.

In light of (148), we need to assume that (146b) is the structure for the perfect construction because only in (146b) *have can be an auxiliary

42 However, (ii) indicates otherwise:

(i) John twice tried to decorate the cake twice.

(ii) John twice has decorated the cake twice. (Henry Davis (p. c.))

For the moment, I cannot but set (ii) aside.
satisfying (148).

This choice, however, presupposes that perfect *have* is an auxiliary. But questions immediately arise about why perfect *have* is an auxiliary in the first place and why (146a) is ruled out as a structure for the perfect construction. I leave these questions for further research.

**3.5.2.2.2 Interpretation of Perfect Constructions**

**3.5.2.2.2.1 Thematic Relations**

Structure (146b) accounts for the θ-theoretic properties summarized in (140). First, the suppression of an 'external' θ-role in (140a) has been reformulated as the movement of the agentive argument to the Spec of the FP headed by -en. Second, since *have* is a purely structural head of a relational configuration, (140b) follows: i.e. *have* takes two arguments. Furthermore, in the perfect construction, the specifier argument of *have* receives the agentive interpretation through the binding relations which are forced by the Specifier Binding Condition.

**3.5.2.2.2.2 Parsons' Resultant State**

The present analysis assigns perfect and passive participles an identical structure. I claim that semantic differences between the passive
and perfect constructions hinge on the relational property of have. In particular, have in the perfect construction is the source of the interpretation of the 'result' of a preceding event in Parsons' (1990) sense.\(^{43}\)

Parsons' notion of the resultant state, or R-state, is broader than the normal usage of the term: it refers to any resultant state that is obtained after whatever happens. For example, if Mary has eaten lunch, there is a state that holds forever after: the state of Mary's having eaten lunch. If John has thrown a ball, the state of John's having thrown a ball holds forever after. Parsons' R-state must be distinguished, therefore, from the resultant state in the sense of traditional analyses of verbal aspect (e.g. Dowty (1987) and Pustejovsky (1988, 1991)), in which a throwing-a-ball event is an activity which does not imply any resulting state.

Parsons postulates an event role, e, as part of the representation of the meaning of a predicate. Parsons gives the following informal semantic descriptions of the constructions in question:

---

\(^{43}\) See Anagnostopoulou, Hale, Iatrdou, and Izvorski (1997) for a related analysis. See also Smith (1991) for a discussion of the semantics of the perfect construction.
I have bound him.

For some event e:

e is a binding,

the Agent of e is me,

the Theme of e is him, and

e's R-state holds now.

(Parsons (1990: 245))

The statements in (150b) constitute the interpretation of (150a). On the basis of the formal rules that Parsons gives, the informal descriptions in (150b) could be formalized as follows:

(151) \( (Ee)[(\text{Binding}(e) \& \text{Agent}(e, I) \& \text{Theme}(e, \text{him}) \& ((E_t)[t=\text{now} \& \text{Holds}(e's \text{ R-state}, t)])] \)

Parsons (p. 234) gives the following definition for e's R-state:

(152) e's R-state holds at some time t iff e culminates at or before t.

According to (152), when e culminates at or before t, e's R-state holds irrespectively of the aspectual type of a verb that e is assigned. Strictly speaking, (152) does not imply that e's R-state holds 'forever after' but I take it as sufficient for characterizing the essential interpretation of the perfect construction.

In my analysis of the perfect construction, Parsons' R-state reading could be expressed as a possessive relation/state, which arises from have (based on central coincidence), between an argument and an eventuality that a phrase headed by -en denotes. In light of this, consider the following examples:
(153) a. John has known Mary since she was a child.

b. Lucie has advised the prime minister.

(153a) gives an R-state reading: John is in a possessive relation, at the moment of speech, with a state of John’s knowing Mary. In other words, there is a state of John’s knowing Mary.

(153b) is slightly different from (153a). In (153b), the verb advised strongly favors a perfective interpretation. This lexical property of advised gives rise to an interpretation in which an event denoted by the en phrase [advised the prime minister] is culminated. This leads to an interpretation that at the moment of speech, Lucie is in a possessive relation with a culminated event of the prime minister being advised by her (Lucie). Namely, there is a state of Lucie’s having advised the prime minister.

Notice that the perfective meaning of advised does not directly follow from the structure I have proposed for the perfect construction. The perfective interpretation, however, is not a necessary interpretation of the perfect construction. (153a), for example, is associated with what is often called the continuative interpretation (see, e.g. McCawley (1971) and Brinton (1988)). Various subclasses of the interpretation of the perfect construction depend on the lexical property of verbs. The present analysis only captures the core semantic property of the perfect construction: Parsons’ R-state. 44

44 I assumed, however, that the perfect auxiliary have does not denote an independent eventuality. If this is correct, central coincidence as the denotation of perfect have claimed here cannot be a full eventuality. Cf. footnote 42.
3.5.2.3 Accusative Case Checking in Perfects

So far in the analysis I have proposed, I have mostly suppressed issues of structural Case. My central interest is in the properties of 1-functors, in particular, their properties that reflect universal 1-syntax. Since structural Case is not directly related to 1-syntax and can be subject to language variation, it is only tangential to my central concern.45

In this section, however, I briefly consider accusative Case checking in the perfect construction. Incorporating insights of the previous analyses I have reviewed, I give an analysis of how an internal argument is Case-checked in the perfect construction.

If the preceding discussions are on the right track, perfect participles are nothing but passive participles. One of the important s-syntactic properties of -en is its 'absorption' of a structural Case feature. This is one of the central concerns in the previous analyses I have reviewed. One of the major generalizations about the passive construction is as follows:

45 I will propose, in Chapter 4, that inherent Case depends (partially) on 1-syntax.
(154) An internal argument is not Case-checked by a verb in the passive construction.\textsuperscript{46}

Since perfect and passive participles are treated as identical, (154) should hold in the perfect construction as well. In order to maintain this restrictive hypothesis, a number of the analyses reviewed above consider have to be playing some role. A leading idea behind these analyses can be put as follows:

(155) *Have* causes an internal argument to be Case-checked.

(155) has been formulated in different ways in the previous analyses as I have shown. Their analyses can be summarized as follows:


b. Cowper (1989): *have* Case-licenses -en, and -en in turn Case-licences an internal argument.

c. Noonan (1992): an FP Case-licenses an internal argument in the Spec of the -en phrase that *have* governs.

I adopt the essential idea that *have* helps Case-license an internal argument. Specifically, I propose a fourth alternative: *have* itself Case-licenses an internal argument. I show that it follows from a minimalist

\textsuperscript{46} As Henry Davis (p. c.) suggests, (154) does not appear to be universal. An example is Japanese 'indirect' passive such as (i):

\begin{verbatim}
(i) Taro-ga saihu-o nusum-are-ta.
  Taro-NOM wallet-ACC steal-PASS-PAST
  'Taro had a wallet stolen.'
\end{verbatim}

See footnote 38 in Chapter 4 for a suggestion.
theory of feature checking that incorporates the multiple-Spec hypothesis.

For the sake of exposition, consider a full structure in which the verb's argument is yet to be raised. (157) is such a structure for a perfect sentence *Lucie has advised the student*:

\[(157)\]
\[
\begin{array}{c}
\text{I} \\
\text{I} \\
\text{Spec} \\
\text{F}_1' \\
\text{F}_1 \\
\text{F}_2P \\
\text{has Spec} \\
\text{F}_2' \\
\text{F}_2 \\
vP \\
-\text{en DP} \\
\text{v'} \\
\text{John} \\
v \\
\text{VP} \\
\text{V} \\
\text{DP}_k \\
\text{advised the student}
\end{array}
\]

The structure in (158) has two elements to be moved. Before Spell-out, *has* is raised to I. The Spec argument of *vP (John)* is also overtly raised to the Spec of IP, dropping by at the Specs of *F_2P* and *F_1P*. The structure at Spell-out is thus essentially as follows:

\[
\begin{array}{c}
\text{I} \\
\text{I} \\
\text{Spec} \\
\text{F}_1' \\
\text{F}_1 \\
\text{F}_2P \\
\text{has Spec} \\
\text{F}_2' \\
\text{F}_2 \\
vP \\
-\text{en DP} \\
\text{v'} \\
\text{John} \\
v \\
\text{VP} \\
\text{V} \\
\text{DP}_k \\
\text{advised the student}
\end{array}
\]
This yields the surface form: *Lucie has advised the student*. \(^{47}\)

In addition, the verb *advised* is raised to \(v\) and \(F_2\). At this point, I assume (159) for concreteness:

\[
(159) \quad \text{-En is specified for an accusative Case feature.}
\]

I assume that the accusative Case feature of *-en* is Case-checked by a stem verb through the regular head-head relation when the verbal complex is adjoined to *-en*. \(^{48}\) This is illustrated in (160):

---

\(^{47}\) Since \(V\)'s argument remains in situ at PF, I assume that *-en* in the perfect construction is not specified for [+F] unlike in the *have V-en* construction. See section 3.5.1.1. I have no explanation for this assumption. It might be related with the auxiliary *have* and/or the absence of a second (indirect causative) \(vP\).

\(^{48}\) In this account, the Case feature of the head *-en* is a 'checkee' rather than a checker. This is by no means a regular kind of checking, in which the feature of a head is a checker and the feature of an argument is a checkee.
Therefore, the accusative Case feature of $V_i$ is cancelled and cannot check the accusative Case feature of *the student*. Therefore, 'Case absorption' is reduced to checking of the accusative Case feature associated with -*en*.

Now that $V$'s Case feature is cancelled through checking, $V$ cannot check the Case feature of *the student*. To account for checking of this DP, I adopt a common assumption that *have* can check an accusative Case feature, projecting another Spec position under the multiple-Spec hypothesis. At LF, therefore, DP *the student* (or its features in Chomsky's (1995) Attract/Move F theory) is raised to another Spec of $F_1$P. Through the Spec-head relation, the DP is Case-checked by (the trace of) *have*. The LF representation is as follows:\(^{50}\) \(^{51}\)

---

\(^{49}\) If the accusative Case feature of the verb checks the Case feature of $V$'s argument, the accusative Case feature of -*en* is left unchecked and the derivation crashes.

\(^{50}\) The specifier argument of *have* is Case-checked in just the regular way the subject argument is Case-checked, when it is raised to the Spec of IP.

\(^{51}\) In (161), DP\(_n\) movement to the Spec of $F_1$P skips over the Specs of $F_2$P and of the $v$P. However, this is not a problem for the principle of shortest movement in a minimalist framework because these positions are not Case-checking positions and, therefore, not appropriate targets. The closest target that can avoid the crash of the derivation is the Spec of $F_2$P.
The analysis therefore accounts for accusative Case checking in the perfect construction under the feature checking theory, maintaining the restrictive hypothesis that the perfect and the passive participles are headed by the same -en.

3.5.3 Summary: Interactions

Section 3.5 has examined the present theory's predictions that both -en and have may appear in s-syntax in the same construction and that the two further may interact with $v$. 
The cooccurrence of -en and have is observed in the experiential/causative have V-en construction (e.g. John had his wallet stolen). To this construction, I have applied my analysis of simplex have, complex have, and the interaction of simplex have and v. The analysis derives the ambiguity of the have V-en construction.52

52 Thus far, we have discussed the following possibilities:
(i)  L-syntactic Have
     L-syntactic -en
     S-syntactic Have
     S-syntactic -en
     S-syntactic Have+S-syntactic -en
I have shown that they are all attested in English. This leaves the following options:
(ii) L-syntactic Have+L-syntactic -en
     S-syntactic Have+L-syntactic -en
Possible examples of these patterns are the following:
(iii) I have him bound.  (Parsons (1990: 244))
(iv)  John has a car parked.  (Inoue (1995: 75))
(v)   Ralph has his assignment done/finished.  
     (Hamida Demirdache (p. c.))
Setting aside the question of whether have in (iii-v) is l-syntactic or s-syntactic, the participles seem to be l-syntactic (namely adjectives) because of the lack of agency. Thus, they may be examples that bear out the prediction that an l-syntactic -en phrase can cooccur with have (as a complement of have). Let us call this analysis the complement analysis.
Henry Davis (p. c.) points out, however, that (iii-v) have the implications (vi-vii), respectively:
(vi)   I have him.
(vii)  John has a car.
(viii) Ralph has an assignment.
The same kind of implication is discussed by Traugott (1972) for the Old English counterpart to (iii). The implications indicate, Davis suggests, that the participles in the coda position of (iii-v) are adjuncts modifying the preceding nominal. Let us refer to this analysis as the adjunct analysis. Davis also suggests that this possessive implication may be absent in the examples that have s-syntactic -en, e.g. John had his wallet stolen. This indicates that the complement in this example is the -en phrase [his wallet stolen].
Hamida Demirdache (p. c.) points out that the complement analysis of (vi-viii) is favored over the adjunct analysis because the complement analysis can account for the restriction on the coda, as exemplified by the following:
(ix)  *John has his brother sick.
I have also examined the perfect construction. I have shown that 1-functors *have* and *-en* derive some of the essential interpretations of the perfect construction. I have further considered how V's argument is Case-licensed in the perfect construction under the minimalist feature checking theory.

\( (x) \) *Bill has his daughter married.*

Under the complement analysis in which the complement of *have* in \( (vi-x) \) is not a DP but an *-en* phrase, the restriction can be accounted for as a selectional condition on the complement of *have*, that is, *have* can select an event but not a quality.
CHAPTER 4

L-FUNCTOR CASE AND INHERENT CASE

4.1 Introduction

In this chapter, I extend the l-syntactic analysis of possession developed in section 3.4.1.2 to possessive relations that hold in DP in general. More specifically, I propose that possessive D is a relational l-functor. I propose to derive alienable and inalienable possessive interpretations of possessive DPs such as John's cat and John's child from stative/relational configurations. This analysis captures a parallelism between nominal and verbal possession: John's cat and John has a cat, on the one hand, and John's child and John has a child, on the other (see Burton (1995) for a similar approach to possession).

Furthermore, I propose an analysis of certain Case properties of empty l-functors. I demonstrate that this analysis accounts not only for genitive Case determination by possessive D in English but also for genitive-marked subject constructions in Hindi. I further examine Case properties of l-syntactic heads and propose an analysis of inherent Case. I discuss its consequences on the basis of Hindi dative-marked subject constructions.

The organization of this chapter is as follows. In section 4.2, I consider possessive nominals from the present theoretical point of view. I argue that possessive D is an l-functor, which accounts for its relational property. Section 4.3 outlines an analysis of two types of Case marking.
(by an l-functor and by an l-syntactic head) and gives empirical support based on genitive Case in possessive nominals; and genitive subject constructions and dative subject constructions in Hindi. To examine further consequences of the Case determination by an l-functor, section 4.4 considers perfect constructions in Hindi. Adopting, as a working hypothesis, the assumption that the same thematic relation is expressed universally by the same configuration (cf. Baker's (1988) UTAH), I apply the l-functor-theoretic analysis of the English perfect construction to the Hindi counterpart. Section 4.5 explores further implications of the theories of Case and of l-functors. In section 4.6, I examine Japanese experiential transitive constructions. I point out the semantic parallelism between the Japanese experiential transitive construction and the English have VP construction that we have examined in Chapter 3. I extend an analysis of l-functors to capture that parallelism.

4.2 Possessive D

In Chapter 2, I examined relational nouns in the present l-syntactic framework. In this section, I examine possessive nominals in general, including alienable/extrinsic possession as in John's cat. I propose that possessive D is an empty l-functor that is structurally identical to the l-functor have. This proposal predicts that there are two kinds of configurations that can be associated with possessive D: a complex relational configuration for inalienable possession and a
simplex relational configuration for alienable possession, just as was the case with have. I show that the prediction is borne out.

4.2.1 Barker (1995)

First, let us examine the semantics of possessive DPs in detail drawing on Barker (1995). As I have pointed out in Chapter 2, the relation in possessive nominals expresses various relations depending on the properties of the possessee. This diversity is illustrated by the following examples that we have examined:

(1)  
   a. John's purchase Derived nominals  
   b. John's child Kinship terms  
   c. John's nose Body part terms  
   d. the table's top Part-whole relations  
   e. the woman's pen pal Arbitrary relations  
   f. John's cat/yogurt Extrinsic possession  

(Barker (1995: 8))

Based on Abney (1987), Barker adopts a version of the DP analysis, according to which the structure of John's cat is represented as follows:

(2)  

\[
\begin{array}{c}
\text{DP} \\
\text{DP}_{[\text{poss}]} \\
\begin{array}{c}
\text{DP} \\
\text{Poss} \\
\text{John 's} \\
\end{array} \\
\text{D} \\
\phi_{[\text{poss}]} \\
\text{cat}  \\
\end{array}
\]

See also Burton (1995) for a similar analysis.
To account for the diversity of interpretation of possessive relations in (1), Barker assumes that relational nouns are two-place predicates while simple nouns like *cat* are one-place predicates. For relational nouns, one argument is a nominal that the head is related to and the other argument is an argument that denotes the reference of the head. Other monadic nouns are assumed to have this ‘own reference’ argument. The following illustrates the denotations of the relational noun (3a) and the simple noun (3b):

(3)  

a. $[[\text{pen pal}]] = \lambda x \lambda y [\text{pen pal}(x, y)]$

b. $[[\text{cat}]] = \lambda y [\text{cat}(y)]$

Given this, Barker (p. 54) proposes the following pair of interpretive rules associated with the null possessive $D_{\text{poss}}$:

(4)  

a. Intrinsic relation: $[[\phi_{\text{poss}}]] = \lambda R[R]$

b. Extrinsic relation: $[[\phi_{\text{poss}}]] = \lambda P \lambda x \lambda y [\pi(x, y)^{P(y)}]$

In (4), $R$ is a place holder for a two-place predicate and $P$ is a place holder for a one-place predicate. The symbol $\pi$ is the function that takes two arguments and gives an extrinsic possessive relation.

Rule (4a) gives rise to the following interpretation of *the woman’s pen pal*:

(5)  

a. $[[\text{the woman’s pen pal}]] = \lambda x \lambda y [\text{pen pal}(x, y)](w)$

$$= \lambda y [\text{pen pal}(w, y)]$$

---

2 This argument is similar to Williams’ (e.g. 1989) R-role.
b. 'the set of entities y such that the woman is the pen pal of y'

In (5a), pen pal is taken as a two-place predicate that takes arguments x and y. The denotation of the woman, expressed as w in (5a), replaces variable x. This derives the denotation in the second line of (5a), which can be paraphrased as (5b). Thus, the relation between the Spec and the complement of the possessive D in the woman's pen pal is determined by a lexical property of pen pal.

By contrast, rule (4b) gives rise to the following denotation of John's cat:

(6) a. \[
[\text{[John's cat]}] = \lambda x \lambda y [\pi(x, y)^{\text{cat}(y)}](j)
\]

\[
= \lambda y [\pi(j, y)^{\text{cat}(y)}]
\]

b. 'the set of entities y such that John possesses y and y is a cat'

The interpretation of extrinsic possession is mediated by the function \(\pi\). The paraphrase (6b) is a default interpretation among other possible interpretations mediated by \(\pi\).

### 4.2.2 Parallelism between Possessive D and Have

As I have discussed in section 3.4, possessive have expresses various relations between the subject and the object, depending on the properties of the possessee:
(7)  a. John has a cat.
    b. John has blue eyes.

This diversity parallels the property of possessive D that we have seen in the preceding section. The parallelism between possessive D and have is made clearer by the following contrasts between (8a) and (8b) and between (8c) and (8d):

(8)  a. John has a cat.
    b. John's cat
    c. John has blue eyes.
    d. John's blue eyes

Let me recapitulate my analysis of alienable/inalienable possession associated with have. This inalienable/alienable contrast is captured by two kinds of syntactic configurations in our theory:

(9)  a. Simplex have

\[
\begin{array}{c}
x \\
\text{spec} \\
\text{have} \\
\text{cat}
\end{array}
\]

\[
\begin{array}{c}
x \\
\text{spec} \\
\text{have} \\
\text{cat}
\end{array}
\]
b. Complex *have* (with another head *y*)

![Diagram](attachment:tree_diagram.png)

The head *eyes* is derivatively relational: it takes an inalienable-possessor argument in its specifier position. The noun *cat*, however, does not have a parallel property. In such a case, the default interpretation of alienable possession arises.

I propose to apply our analysis of *have* to possessive D and, thus, capture the parallelism between *have* and possessive D. That is, possessive D is a relational head which may optionally take a relational complement. When possessive D selects a simplex entity complement, it heads a structure that parallels (9a); when it takes a relational complement, it is associated with a structure that parallels (9b). I will discuss each case in more detail shortly.

There is an obvious difference between *have* and possessive D that we have to take care of: *have* is a verb while possessive D heads a nominal. This difference can be given a natural theoretical status in the theory of 1-functors: possessive D is an 1-functor that arises from the s-syntactic insertion of an empty relational head. Since an 1-syntactic configuration is category-neutral in the present theory of l-syntax, the
theory allows a relational head to be a verb or D. Such category labels are determined by the syntactic context in which a head appears.

4.2.3 Possessive D as a Relational L-functor

In a possessive DP structure, Ds function is relational in our terms. It relates its Specifier and complement in a way that is predictable from the inherent property of the noun. For example, in a derived nominal such as John's purchase, the relation is determined by argument structure (l-syntax) of the head noun: John is the agent of purchasing.\(^3\) In a relational nominal such as the woman's pen pal, the relation is determined by the argument structure of the noun under the assumption based on Barker (op. cit.) and Déchaine, Hoekstra, and Rooryck (1994) that relational nouns like pen pal select an internal argument.

By contrast, in cases where the head nominal does not impose such lexical conditions, the relation mediated by D can be just about anything pragmatically imaginable. Cat in John's cat is such a noun. The default interpretation of the relation between John and cat is possession, but the interpretation could just well be 'a cat that John likes' or even 'a cat that John accidentally stumbled on'. These relations do not follow from the property of the head noun. The source of the relation can be localized in possessive D. In this section, I give a detailed l-functor-based analysis of these two kinds of possessive relation.

\(^3\) Cf. Grimshaw (1990), who claims that possessors in nominals are not arguments. She calls them a(rgument)-adjuncts.
4.2.3.1 Intrinsic/Inalienable Possession

Adopting the insight of Vergnaud and Zubizarreta (1992), Barker (1995), and Déchaine, Hoekstra, and Rooryck (1995), among others, I have proposed in Chapter 2 that a relational nominal is derivatively associated with a stative/relational configuration. The specifier argument of this relational configuration is the possessor argument. Thus, a relational noun *child* is associated with the derived l-syntactic structure in (10):

(10) \[ x \]
    \[ y \]
    \[ \text{John} x \]
    \[ \text{child}_i \]

(10) is a strictly l-syntactic way of encoding possession. I have assumed in Chapter 2 that *child* is specified for some (non-structural) semantic features that require the relation of central coincidence be intrinsic. Thus, (10) gives rise to inalienable possession. When morphosyntactically realized in an appropriate way, (10) is mapped into (11):

(11) \[ \text{NP} \]
    \[ \text{Spec} \]
    \[ \text{N'} \]
    \[ \text{John} N \]
    \[ \text{child}_i \]
In addition to this l-syntactic way of encoding possession, I now claim that there is an alternative s-syntactic way of encoding possession, i.e. by means of possessive D. Specifically, I propose (12):

(12) Possessive D is a relational l-functor.

In particular, I assume that possessive D is an empty l-functor derived from an l-syntactic empty stative/relational head.

Being relational, possessive D selects two arguments, just like have. Among several choices of a complement, it can select a relational NP such as (11). Being an l-functor, possessive D must satisfy the Specifier Binding Condition when its complement NP is structurally complex as in (11). To meet the Specifier Binding Condition, the specifier of NP is raised into the specifier of DP. This gives rise to (13), for example:

(13) \[
\begin{array}{c}
  \text{DP} \\
  \downarrow \\
  \text{DP} \quad D' \\
  \downarrow \\
  \text{John's} \quad D \\
  \downarrow \\
  \emptyset \text{Spec} \quad N' \\
  \downarrow \\
  t_j \quad N \quad DP \\
  \downarrow \\
  \text{child}_i \\
  \downarrow \\
  t_i 
\end{array}
\]

The binding relation between John's and \( t_j \) in (13) parallels the binding

---

4 As a working hypothesis, I assume that possessive D is empty. This is because, when Case-marking is taken into consideration, a wider range of data suggests that empty l-functors check Case, including genitive Case. There is an alternative analysis which posits 's in D. See Abney (1987) for discussion.
relation in the complex stative/relational configuration associated with complex *have* in (9b). (13) is an 1-functor-based s-syntactic way of expressing possession, which is, more specifically, inalienable possession due to some inherent property of *child*.

### 4.2.3.2 Extrinsic/Alienable Possession

The simplex relational configuration of *have* in (9a) is associated with alienable possession, which is one of the possible interpretations of central coincidence denoted by a relational configuration. Extending this analysis to possessive nominals, its alienable-possessive interpretation follows from the s-syntactic simplex relational configuration headed by possessive D, a relational 1-functor. The configuration is illustrated in (14):\(^5\)

\[(14)\]

```
DP
  /\     
DP . D'  
  /\      
D  NP    
  /\   ∅  
John's  cat
```

The interpretation associated with this DP projection is the relation of central coincidence between the specifier and the complement of D. How does this derive the diversity of the semantic properties of alienable-possessive nominals? First, alienable possession follows as a default

---

\(^5\) Since I do not assume that Poss (possessive) is an s-syntactic constituent in English, I slightly simplified Barker’s structure in (2).
interpretation of central coincidence. Second, as more marked interpretations of central coincidence, the relation between John and cat can be just about anything imaginable if an appropriate context is supplied.

There are several consequences of this analysis of possessive D. A general consequence (which motivates the analysis in the first place) is the structural unification of possessive D and have. This theoretically captures their parallel properties under the present framework in which (i) a stative/relational 1-syntactic configuration expresses central coincidence and (ii) a spec-head-complement configuration headed by an 1-functor 'inherits' the relational interpretation of its base.

A second consequence follows from the assumption that possessive D is empty. The definite determiner the, for example, is not a relational 1-functor. Thus, the is not forced to project a specifier position. This accounts for the ill-formedness of the following nominals in English:

(15)  a. *John's the cat  
     b. *John's the child

The above argument goes through only when we eliminate an optional movement into the Spec of DP. Consider (15b). It is possible to assume that John's is raised from the specifier of NP because child is a relational noun. (16) illustrates such a derivation:

---

6 Central coincidence, when applied to possessive nominals, is similar to Williams' (1982: 283) Det Rule:

(i) The relation between the possessive NP and the following N' can be any relation at all.

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However, this movement is not motivated because *the* does not force it. If we eliminate an optional movement, it follows that a movement analysis of (15b) is untenable. This is in accordance with a minimalist assumption (Last Resort) that movement applies only when required.

4.3 L-functor Case

Possessive D seems to have another theoretical importance. Possessive D is correlated with genitive Case marking of the argument in Spec of DP. This correlation can be captured by the theory of Case that I will develop in which empty l-functors can determine Case. I refer to the Case determined by an l-functor as *l-functor Case*.

4.3.1 L-functor Case Checking

I propose that l-functor Case determination is reduced to feature checking. Therefore, the l-functor Case feature of an argument is checked against the matching feature of an l-functor head. L-functor Case
checking is based on the general Spec-head relation. This is depicted in the following (in which F [L] stands for an l-functor):

(17) L-functor Case checking configuration

```
        FP
       /  \
Spec   F'
      /    /
Inherent Case   F [L]   XP
```

L-functor Case checking parallels nominative Case checking in the sense that a functional category is specified for a feature and checks the matching feature of an argument raised into its Spec position.⁷

### 4.3.2 Genitive Case Checking by Possessive D

The genitive Case feature checking relation can be schematized in the following:

(18)

```
DP
 /--
D'   
    /--
John's D [L] NP
      /  
     cat Genitive Case checking
```

I propose the following principle of genitive Case checking:

---

⁷ Checking of an accusative Case feature is slightly different because the accusative Case feature associated with a (transitive) verb checks the matching feature of an argument. A functional category (v) only mediates checking.
(19) Genitive Case Checking

The genitive Case is checked by possessive D.

Given (19), the genitive Case feature of John's in (18) is checked by possessive D and no lexical category (such as N) is required to be raised to D.

(19) is similar to a treatment of genitive Case -'s in, for example, Chomsky (1981). Chomsky (1981: 170) suggests that NP is genitive in [np — N] and that this Case is structural. I am essentially agreeing to the first point, but I will show that genitive Case cannot be structural Case.

As a consequence of this analysis, we predict that the genitive Case checked by possessive D must be associated with the relation of central coincidence. This is illustrated by the following example:

(20) [dp *John's, D [belief [t, to be incompetent]]]

This semantic property of genitive Case is unexpected if genitive Case is structural. This is explained in the l-functor-based analysis of possessive D in the following way. Since possessive D is relational, its Spec and the head of its complement must be in the relation of central coincidence. In (20), however, the Spec of DP John and the head of D's complement belief do not have a thematic relation or any conceivable semantic relation that can be expressed as central coincidence. Therefore, they cannot be related by possessive D. In other words, a relational configuration cannot be assigned to (20).

(20) cannot be headed by a purely functional empty D (e.g. as is presumably the case with bare plurals), either. Purely functional empty D does not check a genitive Case feature because the head of the inherent
Case checking configuration must be an l-functor, as in (17). Without any other conceivable structure assignable, therefore, (20) cannot be generated. Only when there is some relation between DP (John's) and N (belief), they can get connected by possessive D, which is a stative/relational l-functor.  

There are two points to be worth mentioning here. First, I have said earlier that the movement of John's into the Spec of D in \[_{dp} John's, \emptyset [_{np} t_i \text{child}_j t_j] \] (in (13)) is triggered by the Specifier Binding Condition. However, given the l-functor Case checking by possessive D, this movement might be actually triggered by genitive Case checking. This suggests that it is possible to reduce the Specifier Binding Condition to feature checking, though I have to leave the issue for future study (cf. footnote 9 in Ch. 3).

Second, in the case of John's cat, no argument is raised to the Spec of D but it is 'base-generated' there. Therefore, in this type of examples, there is no movement motivated by genitive Case checking. Conceptually, however, feature checking has always been a trigger of movement. The present extension of feature checking to genitive checking in John's cat violates this theoretical correlation. A possible way of maintaining the conceptual motivation of feature checking, we could hypothesize that the feature checking in question triggers Merge. In other words, the Spec of D

---

8 A question arises, however, why (20) cannot be interpreted as (i):  
(i) John's, belief [that he, is incompetent]
is merged with the rest of the structure to check the genitive Case feature associated with D. I leave the issue open.9

4.3.3 Inalienable Possession and Genitive Subject

The following illustrates Hindi genitive subject constructions denoting inalienable possession:10 11

9 For the discussion in this paragraph, I owe Henry Davis (p. c.).
10 In (21), a numeral ek ‘a/one’ and a demonstrative us ‘that’ precede head nouns. If they are Ds, they are against the otherwise correct head-last generalization of Hindi s-syntax (verb-final; postpositions instead of prepositions). I assume that numerals and demonstratives are nominal modifiers in Hindi. There is a potential argument for the head-final property of D. Whereas Hindi lacks a counterpart of the, the definiteness can be expressed by the accusative marker -ko. It is not inconceivable to assume that this -ko is a conflated form of Case and [+definite] D. Suppose that this conflation is derived by incorporating -ko into D. If so, D must follow N since -ko is a suffix. 11 (i, ii) show that the genitive marker is also used for ownership of such immovable things as houses and land (McGregor (1995: 56) and Snell and Weightman (1992: 88):

(i) zamiindaar ke do gaamv the.
   zamindar GEN two villages be-PAST
   ‘The zamindar owned two villages.’

(ii) merii ek baRii jaaydaad thii.
    my a large estate be-PAST
    ‘I used to have a large estate.’

Though ownership of villages and estates can be abandoned in a real world, such ownership can be recognized as a property that characterizes the owner (in a way that rich in He is rich characterizes the referent of the subject).

Hindi expresses alienable possession in the following construction that is based on a postposition paas ‘near’:

(iii) vijay-ke paas aesimov-ki sab kitaabai hai.
    Vijay-GEN near Asimov-GEN all books be-PRES
    ‘Vijay has all of Asimov’s books.’

(lit.: Near Vijay are all of Asimov’s books.)

(iv) raam-ke paas caar makaan hai.
    Ram-GEN near four buildings-NOM be-PRES
    ‘Ram has/owns four buildings.’

(Mohanann (1994: 173))
Let us examine (21a) as a paradigmatic case, simplified as in (22) for the sake of exposition:

(21) a. merii ek bahn hai, jo...
   my a sister be-PRES who
   'I have a sister who...

b. us aadmii kii sirf ek hii aamkh hai.
   that man GEN only one CL eye be-PRES
   'That man has only one eye.'

(22) merii ek bahn hai.
   my a sister be-PRES
   'I have a sister.'

(22) semantically parallels the English inalienable-possessive construction. The role of the genitive subject is determined by the predicate noun. The nouns *bahn* 'sister' and *aamkh* 'eye' in (21) must be relational nouns that require an inalienable-possessive interpretation.

Therefore, I apply the 1-syntactic analysis of relational nouns to the Hindi inalienable-possessive genitive subject construction. I have proposed in Chapter 2 that a relational noun is inserted as a complement of a relational configuration and moves to its head position. The relational head relates itself to a specifier. Thus, a relational noun *bahn* 'sister' is associated with the following derived 1-syntactic configuration:

A crucial distinction between (i, ii) and (iii, iv) seems to be not the alienability of possession but its characterizing (or intrinsic) property.
Intrinsic possession is derived from the central coincidence interpretation of the stative/relational configuration and some inherent property of the relational head which requires intrinsic relation.

Recall that I am assuming that I-syntactic structure invariably has the spec-head-complement order. To account for the morphosyntactic realization of a relational nominal, I have suggested the following general principle in Chapter 2:

\[(24) \quad x \rightarrow N \text{ in } [\text{spec } x \text{ complement}], \text{ where } x \text{ is an entity.}\]

Another relevant principle is the head parameter. As I have mentioned in section 2.8.3, I am assuming that the head parameter applies when the derivation enters s-syntax. Following Mahajan (1990) and Mohanan (1994), I assume that Hindi is a head-final and Spec-initial language. Thus, the principle (24) and the head parameter turn (23) into (25):

\[(25)\]
When (25) is selected by possessive D, which is a relational 1-functor, DP must satisfy theSpecifier Binding Condition. It is satisfied when the Spec of NP moves to the Spec of DP, as illustrated in (26):

(26)  
```
      DP
     /   \  
    Spec   D'
   /     \  
merii, I.GEN NP D [L]
  /     \  
|       |  
|       |  
ti, ti t, barn.
```

According to the present system of 1-functor Case checking, D in (26) licenses the genitive Case of the argument in its Spec position because D is specified for [L] (i.e. it is an 1-functor) and Ds projection conforms to the spec-head-complement pattern. The relevant property is schematized as follows:

(27)  
```
      DP
     /   \  
    Spec   D'
   /     \  
Compl D [L]
```

I assume that N-to-D movement does not apply overtly in Hindi because there is no evidence for such movement.
4.3.4 Null L-functor Licensing

A question arises how a phonologically null l-functor is licensed. Feature checking may not be sufficient because the Case checked by an l-functor always has overt manifestation such as English genitive -'s and Hindi genitive -ke (or its variants).

Here I explore a plausible approach to null l-functor licensing which relies on the phonologically overt property of l-functor Case. I suggest that phonologically overt l-functor Case serves to license an empty l-functor head via the Spec-head relation. The Spec-head relation is a well-established s-syntactic relation as well as the head-head relation. To implement this line of approach, I propose the following principle:

(28) Null L-functor Licensing Principle (NLLP)

A null l-functor F is licensed if the Spec of F overtly encodes some property P associated with F.

The property P relevant here is l-functor Case. Thus, possessive D satisfies the NLLP by checking the overt genitive Case of its Spec argument. I further suggest the following minimalist condition:

(29) L-functor checks l-functor Case only if it is forced.

It follows from (29) that an empty l-functor is forced to mark its specifier argument to circumvent a potential NLLP violation.

I consider the NLLP to be a recoverability condition of Spec-head configurations: either the Spec or the head must have content. When the head is null, the Spec must have content. The content is the encoding of
the property P. The same type of condition is, for example, Sportiche's (1996) Doubly filled Voice Filter.

Sportiche (1996) proposes the following analysis of clitics. Consider the following:

(30) Marie les, aura présentés XP, à Louis.
    Marie them will-have introduced to Louis
    'Marie will have introduced them to Louis.'

(Sportiche (1996: 215))

In (30), the clitic les is referentially identical with XP, an empty argument of the verb. Sportiche suggests that the accusative clitic les is base-generated as the head of an Accusative Voice Phrase, selecting as its specifier an accusative DP. This selectional property attracts XP in (30) and is satisfied as an instance of Spec-head licensing at LF. According to this analysis, (30) is assigned the following LF representation:

(31) \[\text{AccP} \ [\text{Acc} \ les] \ [\ldots \text{aura présentés} \ t, \ text{acc} \ [\ldots]]\]

It is well-known that in (30), clitic doubling is prohibited, that is, XP cannot be overt. To account for this, Sportiche proposes to generalize the doubly filled COMP filter (originally proposed by Chomsky and Lasnik (1977)) into (32):

(32) Doubly filled Voice Filter

*\[\text{HXP} \ [\text{H} \ [\ldots]]\]

where H is a functional head and both XP and H overtly encode the same property P.

The property P relevant to clitics is accusative Case. When XP is overt, both XP and les overtly encode accusative Case. This is blocked by (32).
An important general idea behind Sportiche's Doubly filled Voice Filter is that there is some phonological correlation between a head and its specifier. I have incorporated this idea into the NLLP.\textsuperscript{12}

4.4 Inherent Case

In this section, I explore an implication of l-functor Case checking. In the present theory of l-functors, l-functors are traced back to a (purely structural) l-syntactic head. An l-functor's properties are thus based on those of its original l-syntactic head. Given this, the source of l-functor Case checking can be tracked down to a property of an l-syntactic head. That is:

(33) An l-syntactic head can determine inherent Case.

Given (33), the Case checking property of l-functors follows. Recall the Functionalization Principle, repeated below:

(34) Functionalization Principle

Purely structural l-syntactic heads, and only these, can be inserted as an l-functor.

Due to (34), an l-syntactic head, which can assign inherent Case, can be an l-functor if it is purely structural. A natural consequence is that an \textit{l-functor} can determine Case. In addition, because l-functors are subject to s-syntactic principles, they determine Case in an s-syntactic way,

\textsuperscript{12} However, the formulation of the NLLP in (28) is still not totally subsumed under the general doubly-filled HP filter. I will briefly discuss this issue in section 4.6.3.
namely, as feature checking.

4.4.1 Inherent Case Based on L-syntactic Configuration

As we have seen in Chapter 2, the theory of l-syntax seeks to derive θ-roles from l-syntactic configurations. If this line of approach is on the right track, then it raises important issues concerning the status of inherent Case in the theory. Since inherent Case is generally assumed to be associated with θ-roles, it seems likely that inherent Case is derived from l-syntactic configuration in a similar way that θ-roles are derived. This section explores an account of inherent Case which relies on l-syntactic configuration.

L-syntax is expected to be universal since it contributes to lexical semantics. It is evident, however, that inherent Case is not uniform crosslinguistically. Therefore, some other language-specific properties must also be relevant to the determination of inherent Case. I identify these properties as morphosyntactic realizations of an l-syntactic head.

I therefore propose that inherent Case determination depends both on l-syntactic configuration and morphosyntactic realization. The dependence of inherent Case on l-syntactic configuration accounts for the traditional association between inherent Case and θ-roles. The proposal that inherent Case relies on morphosyntactic realization accounts for two things. First, it allows language variation in inherent Case under the assumption that morphosyntactic realization is subject
to language variation. Second, the dependence on morphosyntactic realization is consistent with the common assumption that N and A assign inherent Case. Since adjective may be virtually equivalent to some verb (e.g. *fond* versus *like*), inherent Case cannot be strictly based on meaning. The difference between A and V with respect to inherent Case is accounted for by their difference in morphosyntactic realization.

Departing from the regular type of feature checking, I propose that inherent Case determination is based on the *head-complement* relation, as in (35)

(35) Inherent Case Assignment

In an 1-syntactic spec-head-complement configuration, a head can assign inherent Case to its complement.

An important condition in (35) is that only the stative/relational head can assign inherent Case. (35) is graphically represented as follows:

(36)

```
  x
 /\
spec x  y
```

Inherent Case assignment in (35) derives Chomsky's (1986a) Uniformity Condition, which is given in the following:

(37) Uniformity Condition

If α is an inherent Case-marker, then α Case-marks NP if and only if α θ-marks the chain headed by NP.
The inherent Case-marker $\alpha$ in (37) corresponds to $x$ in (36). The $\theta$-marking relation between $\alpha$ and the chain in (37) corresponds to the head-complement relation between $x$ and $y$ in (36). This head-complement relation in (36) is a necessarily meaningful relation because relations in the 1-syntactic configuration are never semantically vacuous. What (36=35) says is, thus, that $x$ inherently Case-marks $y$ if and only if $y$ is a semantically related complement of $x$. This is equivalent to the Uniformity Condition: an inherent Case-marker $\alpha=x$ Case-marks NP=$y$ if and only if $\alpha=x \theta$-marks the chain headed by NP=$y$. It is just that $\theta$-marking in (37) is reformulated in (36) in terms of the head-complement relation.

4.4.2 Endpoint Coincidence and Dative Subject in Hindi

I now argue that inherent Case marking also depends on some non-configurational semantic information. I specifically propose that dative Case is associated with a type of terminal coincidence in the sense of Hale (1986). Hale (1986: 240) defines terminal coincidence as follows:

(38) With the allative (e.g. to), the end of the figure's trajectory coincides with the place; and with the elative (e.g. from), the beginning coincides with the place.

The first (the allative) type of terminal coincidence is relevant to dative Case. I call it endpoint coincidence. For example, consider (39):
(39) a. John handed a letter to Mary.
   
   b. Mary has a letter.

(39a) expresses, among others, some relation between a letter and Mary but the relation is not central coincidence as is the case in (39b). In (39a), endpoint coincidence arises between a letter and Mary from the end of the trajectory of a letter at Mary. For concreteness, I express endpoint coincidence by a semantic feature specification [Endpoint] of the relational head:

\[
\begin{array}{c}
\text{spec} \\
\text{letter} \\
\text{x to Mary}
\end{array}
\]

Given this, I propose the following universal principle:

(41) In an l-syntactic spec-head-complement configuration, a head L assigns dative Case to its complement if L is specified for [Endpoint]

(41) functions as a general schema. Whether inherent Case is actually checked in accordance with (41) depends on the morphosyntactic realization, or more directly, categorial identity, of the head. Let us pay special attention to Hindi here. In this language, dative

---

13 I leave open the possibility that terminal (including endpoint) coincidence could be ultimately defined in structural terms.
Case is assigned to subject by some verbs:\(^{14}\)

\[(42)\]  
\[\text{a. tuSaar-ko kitaab milii.} \]
Tushar-DAT book-NOM receive-PERF
'Tushar received a book.'

\[\text{b. tuSaar-ko khusii huii.} \]
Tushar-DAT happiness-NOM happen-PERF
'Tushar became happy.'
(lit.: To Tushar happiness happened.)

\[\text{c. tuSaar-ko caand dikhaa.} \]
Tushar-DAT moon-NOM see/become visible-PERF
'Tushar saw the moon.'
(lit.: To Tushar the moon appeared.)

(Mohanam (1994: 141))

Dative Case determination by a verb does not seem to be universal. This language-specificity of inherent Case determination can be reduced to categorial identity of the head because properties that depend on categorial identity (such as V) is different from language to language. I propose the following dative Case assignment in Hindi:

\[^{14}\] See Kachru (1990) for the subjecthood of marked 'subjects'. Based on a number of diagnostics, Kachru demonstrates that marked 'subjects' do not have all the properties that canonical subjects have. This lack of some canonical subject properties is observed in the present example. In (42a), for example, the perfective morpheme \(-i\) agrees with the nominative NP \(kitaab\) but not the dative-marked NP \(tuSaar-ko\).
In an l-syntactic spec-head-complement configuration, a head L checks the dative Case feature of its complement if L is specified for [Endpoint] and realized as V.\(^\text{15}\)

Since morphosyntactic realizations are only available in s-syntax, inherent Case assignment is not purely l-syntactic. It hinges on both l-syntactic and s-syntactic information. I assume that actual assignment is conducted in s-syntax in which l-syntactic information remains available. The l-syntactic property explains the thematic association of inherent Case. The s-syntactic (or morphosyntactic) property permits language variation.

Consider in more detail the example in (42a), repeated as (44), as a paradigmatic case:

(44) tuSaar-ko kitaab mil-ii.
Tushar-DAT book-NOM receive-PERF
'Tushar received a book.'

(44) entails the change of location of kitaab 'book'. As a result, tuSaar 'Tushar' comes to have a relation of central coincidence with kitaab. This meaning is exactly endpoint coincidence. Therefore, I assign to (44) the l-syntactic structure (45):

\(^{15}\) Hindi postpositions do not assign dative Case. Consider (i), in which the postposition par 'to, in, at' does not dative-mark its preceding complement duukaan 'the shop':

(i) vah duukaan par lautaa.
he the shop to went.back  \(\text{(McGregor (1995: 33))}\)
The traditional θ-roles of the arguments are read off (45). The specifier argument corresponds to the traditional theme and the complement to the traditional goal.

Now consider the morphosyntactic realization of (45). Evidence shows that *mil* surfaces as a verb: (i) Hindi's 'perfective' morpheme -aa can be attached to it, yielding the perfective participle *mil-aa* (which can surface as *mil-ii*, as in (44), due to agreement with the nominative argument *kitaab*); and (ii) it has a non-finite form *mil-naa* just like regular verbs. This indicates that in Hindi, some relational heads can be realized as verbs just as in English. Setting aside an explanation here, I stipulate such a special property in the lexical entry of the head, as illustrated in the following:

\[(46) \quad \text{Formal feature} \]

\[
\text{mil} \quad \text{Cat: V}
\]

Given (46), (45) is mapped to (47) below when it is morphosyntactically realized. S-syntactic structure is also subject to the head parameter.
Thus, the universal spec-head-complement order is arranged and the head-final order is yielded. This gives rise to (47):\(^{16}\)

\[(47)\]

```
<table>
<thead>
<tr>
<th>VP</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP</td>
</tr>
<tr>
<td>kitaab np</td>
</tr>
<tr>
<td>book</td>
</tr>
<tr>
<td>V</td>
</tr>
<tr>
<td>tuSaar-ko</td>
</tr>
<tr>
<td>mil</td>
</tr>
<tr>
<td>Tushar receive</td>
</tr>
<tr>
<td>[Endpoint]</td>
</tr>
</tbody>
</table>
```

It is clear that VP in (47) matches the configuration for the inherent Case assignment and, more specifically, the conditions on dative Case assignment in (43), repeated in (48):

\[(48)\] Hindi Dative Case Assignment

In an 1-syntactic spec-head-complement configuration, a head L checks the dative Case feature of its complement if L is specified for [Endpoint] and realized as V.

(48) correctly determines dative Case on \textit{tuSaar-ko} in (47).

The analysis of endpoint coincidence can account for the rest of the examples in (42), repeated in (49):

\[(49)\]

a. \textit{tuSaar-ko khusii huii.}

\textit{Tushar-DAT happiness-NOM happen-PERF}

'Tushar became happy.'

(lit.: To Tushar happiness happened.)

b. \textit{tuSaar-ko caand dikhaa.}

---

\(^{16}\) As pointed out in footnote 13, it is not entirely clear whether the dative-marked argument is surface subject. Therefore, I cannot conclude that the dative argument ends up in Spec of IP. I put the issue aside.
Tushar-DAT moon-NOM see/become visible-PERF
'Tushar saw the moon.'
(lit.: To Tushar the moon appeared.)
The meaning that is expressed by a psychological predicate is consistent with endpoint coincidence. Mohanan's literal translation in (49a) can be further paraphrased as 'happiness comes to Tushar'. Likewise, a verb of physical sensation as in (49b) could be analyzed as a predicate of endpoint coincidence in an extended sense: (the mental representation of) the moon comes to Tushar. Thus, (49) can be naturally represented in the present analysis as involving relations of endpoint coincidence:

(50)

When the theme argument denotes something abstract such as happiness, the complement in (50) is what is sometimes called an experiencer.

Further examples, such as (51), can be analyzed in a parallel way:

(51) a. Wanting or needing:

aapko kyaa caahiye.
you(DAT) what want/need

'What do you want/need?'
b. Obligation or compulsion:

mujhe jaanaa hai
I(DAT) go-INF am
'I have to go.'

(Masica (1991: 347-349))

Under the analysis proposed, these examples must be associated with endpoint coincidence. Indeed, it is possible to rephrase the glosses as 'what desire comes to you?' for (51a) and '(the intention of) going comes in my mind.' for (51b). The occurrence of dative Case in (51), then, can be related with endpoint coincidence.

It has been proposed in traditional analyses (e.g. papers collected in Verma and Mohanan (1990)) that there is a correlation between the dative subject and the experiencer/possessor/goal roles. In our analysis, the thematic relation that underlies the dative subject construction is captured as the relation of endpoint coincidence. It is more general and principled than listing thematic roles such as experiencer and goal.

4.5 Hindi Perfect Constructions

To elaborate on the analysis of l-functor Case, I now closely examine perfect constructions in Hindi, another marked subject construction in this language. I first argue that the Hindi perfect construction can be analyzed in the same structural way as the English perfect construction. In section 4.5.1, I give an overview of ergativity in the Hindi perfect construction. In section 4.5.2, I give a theoretical
analysis of the Hindi perfect construction and give arguments for my analysis. Based on the analysis of the Hindi perfect construction, I next propose an elaborated version of 1-functor Case checking and account for the marked subject property of the Hindi perfect construction.

4.5.1 Ergativity in the Perfect Construction

According to a traditional typological distinction (e.g. Dixon (1979, 1994)), Hindi can be considered a split-ergative language. Its split is triggered by aspect/tense. Subjects appear with nominative (unmarked) Case in non-perfective transitive sentences whereas subjects are marked with ergative Case in perfective transitive sentences. They are perfective

---

17 It is fairly well-known that ergative languages are seldom totally ergative. According to Dixon (1979:95), there are four factors conditioning this case-marking split. They are summarized below with examples of split manifestations (see also Van Valin (1992)):

(i) Tense/Aspect:
   - Past/Perfect: ergative-absolutive
   - Others: nominative-accusative

(ii) Verb Meaning (Split Intransitivity):
   - Agentive intransitive subject: ergative-absolutive
   - Non-agentive intransitive subject: nominative-accusative

(iii) Lexical Inherent Contents of Arguments:
   - Full NPs: ergative-absolutive
   - Pronouns: nominative-accusative

(iv) Main/Subordinate Clauses:
   - Main/Tensed subordinate clauses: ergative-absolutive
   - Tenseless subordinate clauses: nominative-accusative

Hindi appears to belong to (i). This, however, does not capture the general picture of Hindi marked subject constructions.
in the sense that they denote an event that is completed (the whole event is realized) or terminated (the whole event may not be realized but it is terminated nevertheless). Perfective sentences are subdivided into perfect and perfective. Here I am mainly concerned with the perfect construction. See footnote 18 for the perfective construction.

Below I give the schemata of the present and the perfect constructions with examples cited from Hackman (1976). Present tense sentences exhibit the general pattern indicated in (52):

(52) Present: \( \text{SUBJ (OBJ) } V_{\text{stem}} -taa \text{ ho.PRES} \)

a. laRkaa patr likh-taa hai.
   boy letters write-IMPERF.M.SG is
   'The boy writes letters.'

b. laRkaa so-taa hai.
   boy sleep-IMPERF.M.SG is
   'The boy sleeps.'

The verb form with -taa is known as the imperfective participle, which agrees with the subject for number and gender. The participle cooccurs with the present tense form of the auxiliary verb ho 'be'.

(53) below shows general patterns of present **perfect** sentences. Verbs appear as a perfective participle which is formed by suffixation of -
aa (or -ii, -e, depending on agreement),\(^{18}\) and cooccur with the present tense form of ho (see, e.g. Koga (1986), McGregor (1995), and Mahajan (1990)).\(^{19}\)

---

\(^{18}\) Examples below are Hindi passive sentences. They show that the passive participle has the same morpheme -aa as the perfective participle:

(i) ve satru se maar-e jaa-emge.
    they enemy by kill-PERF.M.PL go-FUT
    'They will be killed by the enemy.'

(ii) hindii bhaarat mem bol-ii
    Hindi India in speak-PERF.F.SG
    jaa-ii hal.
    go-PERF.F.SG is
    'Hindi is spoken in India.'

\[(\text{McGregor (1995:129)})\]

The passive auxiliary is jaa 'go' in Hindi. When it is embedded in the perfect construction, the auxiliary jaa itself appears as a perfect participle with the perfect auxiliary ho 'be'.

The morphological identity of the perfective morpheme and the passive morpheme strongly indicates that they should be treated as the same morpheme in the present theory of l-functors. I leave an analysis of Hindi passives for further research.

\(^{19}\) Hindi has a construction closely related to the perfect construction. This is traditionally called a perfective construction, whose verb is also headed by -aa. This is illustrated in (i):

(i) Perfective (often meaning past tense):
    Trans:SUBJ-ERG OBJ \(V_{stem}\)-aa (agr with OBJ)
    Intr: SUBJ (PP) \(V_{stem}\)-aa (agr with SUBJ)
    a. laRke ne khana khay-aa.
       boy ERG food eat-PERF.M.SG
       The boy ate his meal.
    b. aurte baazaar ga-yii.
       women bazaar go-PERF.SG
       'The women went to the bazaar.'

The major overt difference between the perfect and the perfective is the presence/absence of ho 'be': it is lacking in the perfective construction. McGregor (1995: 25), among others, points out that perfective sentences have no specific time reference. He describes this construction as denoting completedness of action. Though it is used chiefly for events occurring in past time, perfective verb forms may appear in non-past conditional clauses. This is illustrated in (ii, iii):

(ii) agar vah aa-yaa to meraa us-se paricay
    if he come-PERF then I(GEN) him-with acquaintance
    kara-ia.
    do-cause-IMPER
Present perfect:

Transitive: SUBJ-ERG OBJ $V_{stem}^{\text{aa}}$ ho.PRES

Intransitive: SUBJ (PP) $V_{stem}^{\text{aa}}$ (agr with SUBJ) ho.PRES

a. raam ne kitaab paRh-ii hai.
   Ram ERG book read-PERF.F.SG is
   'Ram has read the book.'

b. vah daftar gay-aa hai.
   he office go-PERF.M.SG is
   'He has gone to the office.'

The perfective participle agrees in number and gender with the direct object, if any, in the perfect construction. Otherwise it agrees with the subject.

---

(iii) agar us-se mulaqaat huii to maim aap-ko bataauum-gaa.
   if him-with meeting be(PERF) then I(NOM) you-to tell-FUT
   'If I meet him I'll tell you.'

(McGregor (1995: 137))

In (ii, iii), the verbs in the conditional clauses have a completive meaning. Past tense is irrelevant in these sentences.

The completive interpretation of the perfective construction can be demonstrated further by the following example:

(iv) *raam ne kitab aksar/kabhi kabhi/har shanivaar paRh-ii.
   Ram ERG book often/once in a while/every Sunday read-PERF
   'Ram often read a book. Ram read a book once in a while/
   every Sunday.'

(Veena Dwivedi (p. c.))

(iv) is ill-formed because habitual (imperfective) adverbs are incompatible with the completive meaning associated with the verb.

---

A glide $y$ is inserted before $-aa$ when the verb stem ends with a vowel sequence such as $-aa$, as in $gay$-$aa$ 'gone'. In what follows, I treat the glide as a part of a stem.

20
The Case-marking system in the Hindi perfect construction shows ergativity, as illustrated in (53). In the transitive clause (53a), the agent phrase is marked with the ergative marker ne whereas in the intransitive clause (53b), the subject is unmarked.\textsuperscript{21}

It should be pointed out here that Hindi adjectives generally end with -aa, which is phonologically identical with perfective -aa. It agrees with the head noun in gender, number, and Case, as illustrated in (54):

\begin{itemize}
  \item[(54)] acch-aa ‘good’ (citation form)
  \begin{itemize}
    \item[a.] acch-aa masculine, singular, nominative
    \item[b.] acch-e all other forms for a masculine noun
    \item[c.] acch-i feminine form with any number and Case
  \end{itemize}
\end{itemize}

(\textsuperscript{288}\textsuperscript{McGregor (1995: 7)})

The agreement pattern of perfective -aa is the same as adjectival -aa except that perfective -aa is not sensitive to the Case of the nominal that it agrees with.

\textbf{4.5.2 Structure of the Perfect Construction}

\textbf{4.5.2.1 Perfective Morpheme -aa as an L-functor}

Taking (53a) for instance, repeated in (55), I consider step-by-step how (55) can be assigned an s-syntactic structure in the present

\textsuperscript{21} For discussions of ergativity, see Dixon (1979, 1994), Marantz (1984), Bok-Bennema (1991), Bobaljik (1992), Campana (1992), Jones (1992), Murasugi (1992), Blake (1994), and Bittner and Hale (1996a, b), among others.
First of all, a head-complement structure is projected in 1-syntax from the eventive head read. When an eventive projection is morphosyntactically realized and the head parameter is set, it is realized as the head-final VP, as in (56):

\[(56)\]
\[
\text{vP} \\
\text{Spec} \quad \text{v} \\
\text{VP} \quad \text{v} \\
\text{DP} \quad \text{V} \\
\text{kitaab paRh} \\
\text{books read}
\]

Since VP in (56) requires a subject of predication, it is selected by \(\text{v}\) which provides a Spec position for the subject:

\[(57)\]
\[
\text{vP} \\
\text{Spec} \quad \text{v} \\
\text{VP} \quad \text{v} \\
\text{DP} \quad \text{V} \\
\text{kitaab paRh} \\
\text{books read}
\]

Next, \(\text{vP}\) in (57) is selected by the perfective morpheme \(-aa\). Recall, as illustrated by (54), that \(-aa\) is a morpheme typically suffixed to adjectives. I make the assumption that the perfective morpheme \(-aa\) is an 1-functor derived from the adjective-forming \(-aa\). This is a natural assumption in the present analysis of 1-functors which in effect claims
that in English, the adjective-forming -en is extended as the passive/perfect morpheme -en. Given this, -aa projects a spec-head-compl configuration in s-syntax (its surface form is -ii in the present example for a reason I turn to shortly), as follows:

\[
\begin{array}{c}
\text{FP} \\
\text{Spec}_1 \\
\text{vP} \\
\text{t}_1 \\
\text{VP} \\
\text{DP} \\
\text{kitaab paRh books read}
\end{array}
\]

Because -ii is originally a stative head, its specifier satisfies the Specifier Binding Condition by attracting the argument in the Spec of vP.

FP in (58) is motivated by the overt perfective morpheme -ii. In the present theory, it is an l-functor that heads a full projection. This FP corresponds to the FP headed by -en in English; it is an essential substructure of the passive/perfect construction.

**4.5.2.2 Empty Relational L-functor**

There are two reasons to project another l-functor on FP in (58) in the perfect construction. One is to license a position that can accommodate the ergative argument and the other is to account for the
R-state interpretation (in the sense of Parsons (1990)) of the perfect construction. I discuss them in turn.

(58) does not have a position for the ergative argument because it is a structure that corresponds to the English passive construction in which an external argument does not surface as subject. The two Spec positions in (58) cannot accommodate the ergative argument for theory-internal reasons that have been defended in Chapters 2-3. First, the Spec of vP must be occupied by the trace of an argument which is raised to the Spec of FP to meet the Specifier Binding Condition. Second, the Spec of FP might be able to introduce the ergative argument but it cannot check the ergative Case feature because in the present theory of inherent Case, 1-functor Case checking is carried out only when a 1-functor is forced to do so. Since F is inherently associated with a phonologically non-null element -\(\text{t}l\), it does not have to license an overt Case to satisfy the NLLP, repeated in (59):

(59) Null L-functor Licensing Principle (NLLP)

\[
\text{A null 1-functor } F \text{ is licensed if the Spec of } F \text{ overtly encodes some property } P \text{ associated with } F.
\]

The Spec of FP is not a structural Case position, either. In the present analysis which identifies the perfective morpheme with the passive morpheme, a crucial property of -\(\text{a}a\) is 'Case-absorption'. In Chapter 3, I made the technical assumption that the passive/perfect morpheme is specified for a structural Case feature and that this feature is checked against the Case feature of V. As a consequence, the passive/perfect morpheme cannot Case-check an argument in its Spec position. This
'Case-absorption' effect must hold in the perfect construction as well. Therefore, it follows that the Spec of FP cannot license the ergative argument in any way.

If another l-functor is postulated and it selects the FP shown in (58), the problem of accommodating the ergative argument would be solved. This gives rise to (60):

\[
(60) \quad \text{Spec} \quad F_1P
\]

\[
\begin{array}{c}
\text{raam ne} \\
\text{Ram ERG} \\
\text{DP}
\end{array}
\]

\[
\begin{array}{c}
\text{kitaab paRh} \\
\text{books read}
\end{array}
\]

In (60), F₁ is empty: there is no overt morpheme that corresponds to it in Hindi perfect constructions. Thus, checking of the ergative Case feature in the Spec of F₁P could be a consequence of the NLLP. In contrast, checking of the ergative Case feature in the Spec of F₂P is impossible because the head F₂ is non-null and therefore does not have to check inherent Case.

While the above argument is rather theory-internal, a relational l-functor F₁ in (60) is further motivated by semantic considerations.
McGregor (1995: 27) describes the interpretation of the present perfect construction as follows:

\[\text{(61) } \text{[Present perfect] forms define actions as completed and }\]

\[\text{connected in some way with present time. They may describe }\]

\[\text{not only actions occurring in the immediate past, but also }\]

\[\text{actions occurring in the more distant past whose }\]

\[\text{consequences are felt as continuing to the present.}\]

[Italics are mine/TS]

The italicized parts indicate that the Hindi perfect construction parallels the English counterpart in the sense that they both are assigned a R(resultant)-state interpretation in the sense of Parsons (1990).

The R-state reading of the Hindi perfect construction is accounted for on the basis of the empty l-functors in (60) in the following way. First, F₁ is the direct source of the interpretation that raam ‘Ram’ is in a possessive relation (based on central coincidence) with the denotation of F₂P. Second, raam ne binds its trace in the Spec of vP. From these, an interpretation follows that raam ne is in a possessive relation with the denotation of F₂P in which the agent is raam ne himself.

In (60), the verb is paRh ‘read’, whose perfective participle may receive a perfective interpretation. Thus, the interpretation of (60) is that at the moment of speech, raam is in a possessive relation with an event of raam’s having read books. To put this more generally, there is a state of raam’s having read books. This is an R-state reading in the sense of Parsons (op. cit.).
(60) is structurally identical to the structure for the perfect construction in English. $F_2$ in (60) corresponds to the passive/perfect morpheme -en; and null $F_1$ is assigned the lexical content have. Hindi, however, lacks a counterpart to this monomorphemic verb of possession, which I refer to as HAVE. I have shown in section 4.4.1.2 that Hindi possessive sentences do not employ HAVE. As I have proposed in Chapter 2, an empty l-functor is a possible option in UG. I am claiming that this option is employed in the Hindi perfect construction.

In the next two sections, I show that (60) can account for several properties of the ergative argument: binding of the reflexive possessive anaphor apn้า, verbal agreement, and the nominative Case of the object argument in the perfect construction.

4.5.2.3 Reflexive Binding

There is traditional evidence for the 'subjecthood' of the ergative argument. Such evidence, however, must be reexamined under the present analysis in which the traditional subject could occupy various positions, the Spec positions of $F_1$, $F_2$, and $vP$, as indicated in (60), and the Spec of IP, another possible position for subject.\footnote{Here, I only consider cases where $vP$ is projected, that is, where an agentive/ causative argument appears.}

A first piece of evidence for the 'subjecthood' of the ergative argument is concerned with binding of the reflexive possessive anaphor apn้า (or apnии, depending on agreement with the antecedent). According
to Masica (1991) and Mohanan (1994), the reflexive *apnāa* takes a subject but not other arguments as its antecedent:

(62) a. gopaal apnii citthii likh-tii thii.
    Gopal(NOM) one's own letter write-IMPERF was
    'Gopal used to write his own letter.'

b. gopaal ne apnii citthii likh-ii thii.
    Gopal ERG one's own letter write-PERF was
    'Gopal had written his (own) letter.'


(62a) shows that *apnāa* is properly bound by the nominative subject in an imperfective construction. The same condition is also observed in the ergative example in (62b). This indicates that the ergative argument is a proper antecedent in the same way as the nominative subject. Consider further examples of the ergative-perfect construction:

(63) a. ravii apnii saikil-par baTh-aa.
    Ravi.NOM one's own bicycle-Loc sit-PERF
    'Ravi sat on his own bike.'

b. vijay ne ravii-ko apnii saikil-par
    Vijay ERG Ravi-ACC one's own bicycle-LOC
    baTh-aa-yaa
    sit-Caus-PERF
    'Vijay, seated Ravi, on his own bike.'

(lit.: Vijay caused Ravi to sit on Vijay's bike.)

(Mohanan (1994: 123))
(63b), which is the causative counterpart of (63a), shows that the antecedent of *apnaa* must be the subject rather than the object.

Given this set of evidence, it is traditionally assumed that the ergative-marked argument is a subject. Notice, however, that this evidence does not necessarily entail that the *direct* antecedent of *apnaa* occupies the Spec of IP. It is equally consistent with a hypothesis that *apnaa* is bound by the ‘agent/causer’ argument (trace) in the Spec of vP. See (64), which is the structure built up for (63b) in the present theory:23

---

23 Mahajan (1990) and Mohanan (1994) assume that the Case-particle *ko* in this example reflects accusative Case rather than dative Case. Since I lack sufficient understanding of this type of -*ko*, I ignore it here.

The internal structure of VP is the direct application of Hale and Keyser’s (1994) analysis of causative *put*. Therefore, the VP in (64) is thematically equivalent to ‘cause-sit’.

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In (64), *apnaa* (*apnii* due to agreement) is bound by the trace in the Spec of *vP* and this trace in turn is bound by the two upper Spec's, the higher one of which is ergative-marked DP *vijay ne*. Therefore, *apnaa* can be bound ultimately by *vijay ne*. Thus, the structure (64) yields the proper interpretation of the reflexive possessive *apnaa*. The reflexive binding phenomenon is compatible with a representation in which the trace in the Spec of *vP* is the direct antecedent of *apnaa* and in which the ergative argument occupies the Spec of $F_1P$.\(^{24}\)

\(^{24}\) By contrast, the subject of PP *ravii-ko* ‘Ravi-DAT’ cannot be an antecedent of *apnaa*. This indicates that structural binding is only one of the licensing conditions on *apnaa*. See, e.g. Mohanan (1994) for more details.
4.5.2.4 Agreement and Nominative Case

I have pointed out at the outset of section 4.5.1 that in non-ergative constructions, a main verb and an auxiliary, if any, agree with the nominative subject for number and gender:

(65) a. raam roTii khaa-taa th-aa
    Ram(M.SG) bread(F.SG) eating(M.SG) was(M.SG)
    'Ram (habitually) ate bread.'

b. siitaa kelaa khaa-tii th-ii
    Sita(F.SG) banana(M.SG) eating(F.SG) was(F.SG)
    'Sita (habitually) ate banana.'

(Mahajan (1990: 72))

In (65a), the verb and the auxiliary agree with the nominative subject raam, which is a singular masculine noun, but not with the object roTii, which is a singular feminine noun.

In the perfect construction, by contrast, the verbal agreement is with an internal argument if any, as shown in (66):25

(66) raam ne roTii khaay-ii th-ii
    Ram(M.SG) ERG bread(F.SG) eaten(F.SG) was(F.SG)
    'Ram had eaten bread.'

(Mahajan (1990: 73))

25 If V's argument is followed by a postposition such as -ko, the agreement is neutral and shows the third person singular form, as in (i). I set this pattern aside.

(i) baccoN-ne siitaa-ko dekh-aa th-aa
    children(M.PL)-ERG Sita(F.SG)-DAT seen(M.SG) was(M.SG)
    'The children had seen Sita.'

(Mahajan (1990: 73))
What determines the verbal agreement in (66) is the internal argument roTii, not the external argument raam. When the perfect construction is headed by an intransitive verb, the ergative marker does not appear and the nominative-marked subject agrees the verbal elements, irrespective of tense/aspect:

(67) raam baazaar gay-aa

Ram(M.SG) market gone(M.SG)

'Ram went to the market.' (Mahajan (1990: 73))

To account for these patterns of verbal agreement in Hindi, I adopt the feature checking theory. The null hypothesis is that the subject argument agrees with the (auxiliary) verb ho 'be' in Spec of IP via the Spec-head relation. I take the verb ho as a counterpart of be. Thus, extending the analysis of be in section 2.7.5, I assume that ho is a semantically vacuous v and that ho may select a participial phrase headed by imperfective -taa and perfective -aa.

For feature-checking reasons, ho is incorporated into I, as illustrated in (68). In the incorporated position, ho checks Φ-features of the argument raised to the Spec of IP (DP in (68)):
This analysis accounts for agreement between ho and the subject argument in the non-ergative constructions illustrated in (65) and the intransitive construction in (67). In these constructions, the subject argument is raised to Spec of IP before Spell-out and agrees with ho.

To account for the agreement between Vs argument and ho in the ergative-perfect constructions in (65) under this null hypothesis, I assume that Vs argument is raised to the Spec of IP before Spell-out. Why is it Vs argument, but not the ergative argument, that is raised to the Spec of IP? The answer follows if we assume that the ergative marker is Case-checked at the Spec of F1P: therefore, there is no reason for the ergative marker to be raised to the Spec of IP.

Agreement between an argument and a participle can be accounted for under the theory of feature checking when an argument is raised to the Spec of a functional projection headed by participle-forming morphemes such as -taa (imperfective) in (65) and -aa (perfective) in (66, 67). In this Spec position, a raised argument agrees with each morpheme (and further raises to Spec of IP, where it agrees with ho ‘be’). V’s argument is raised in the perfect construction whereas the agent/causer argument is raised in the imperfective construction.

The raising of V’s argument in the perfect construction also accounts for its nominative Case under the standard assumption that l^0 is a nominative Case checker.26 The derived structure for the perfect construction, therefore, looks like the following:

26 It is possible to assume that l^0 checks the ergative Case feature in the perfect construction. This assumption, however, has an unfavorable
Structure (69) gives rise to a well-formed OSV sequence in Hindi, a language with quite free word order.\(^{27}\)

It implies that the Case feature of I\(^0\) is correlated with the perfective property which is determined not by I\(^0\) but by some other element.

\(^{27}\) There is evidence that the ergative argument is raised at LF. Consider the following perfective example (see footote 18 for the perfective construction):

(i) [PRO andar jaakar] gopaal ne citthii likh-ii.
   inside go-ABS Gopal ERG letter write-PERF
   'Gopal going inside Gopal has written a letter.'

(Masica (1991: 342))

In (i), PRO is only coreferential with the ergative argument gopaal ne but not V’s argument citthii. This indicates that PRO in the absolute phrase is c-commanded by the ergative argument but not by V argument at LF.
under common assumptions that control is based on c-command at LF and that an absolute phrase (AbsP) is adjoined to IP.

I make the natural assumption that the ergative argument is Case-checked by the same empty relational 1-functor be it in either the perfective or the perfect. Therefore, LF-raising of the ergative argument is forced in this construction if the ergative argument is in Spec of F₁P headed by an empty 1-functor as in the following structure:

(ii)

\[
\begin{array}{c}
\text{IP} \\
\text{AbsP} \\
\text{PRO} \\
\text{VP} \\
\text{P} \\
\text{andar}
\end{array}
\quad
\begin{array}{c}
\text{Abs'} \\
\text{DP} \\
\text{V-kar} \\
\text{DP₁} \\
\text{t₁}
\end{array}
\quad
\begin{array}{c}
\text{Abs citthii} \\
\text{F₁P} \\
\text{F₂P} \\
\text{t₄}
\end{array}
\quad
\begin{array}{c}
\text{F'} \\
\text{likh₁-φ₂-φ₃-φ₄} \\
\text{F₁} \\
\text{t₃}
\end{array}
\quad
\begin{array}{c}
\text{gopaal ne} \\
\text{F₂} \\
\text{t₂}
\end{array}
\quad
\begin{array}{c}
\text{VP} \\
\text{v} \\
\text{t₁}
\end{array}
\quad
\begin{array}{c}
\text{DP} \\
\text{t₁}
\end{array}
\]

In (ii), PRO in AbsP is c-commanded by citthii but not by gopaal ne (see May (1985) and Chomsky (1986b) for c-command in adjunction structure). This makes a wrong prediction that PRO is controled by Vs argument citthii. This indicates that the ergative argument is in a position higher than other arguments at LF. LF-raising of the ergative argument is also argued for by Mahajan (1990). This issue is, however, is not inconsistent with my central claim that the ergative argument occupies Spec of F₁P at the level where it is introduced.
4.5.3 Ergative Case Checking

Let us turn to the issue of ergative Case checking by $F_1$. The preceding sections have argued that a Hindi perfect sentence such as (70a) is assigned the structure in (70b):

(70) a. raam ne kitaab paRh-ii hai

Ram ERG book read-PERF.F.SG is

'Ram has read the book.'

That $F_1$ must check Case follows from the interaction between the theory of 1-functor Case checking and the theory of 1-functors. Under the theory of 1-functors, $F_1$ is an 1-functor, which is derived from a
stative/relational base that projects a spec-head-complement structure. The spec-head-complement configuration headed by an l-functor is an l-functor Case checking configuration, as repeated in (71):

(71) L-functor Case checking configuration

I propose the following principle in Hindi:

(72) Ergative Case Checking

In Hindi, the ergative Case feature is checked by F [L].

The crucial portion of the relevant configuration is given in the following:

(73)  

In (73), $F_1$ must check an ergative Case feature because $F_1$, being phonologically empty, needs to satisfy the NLLP.
4.5.4 Ergative Case and Θ-Rule

Hindi ergative Case appears to be correlated with the agent/causer role (cf. Mohanan (1994) and Mahajan (1990, 1994)). Consider the examples of dative subject constructions in (42) again, repeated as (74):

(74) a. tuSaar-ko kitaab milii.
    Tushar-DAT book-NOM receive-PERF
    'Tushar received a book.'

    b. tuSaar-ko khusi huii.
    Tushar-DAT happiness-NOM happen-PERF
    'Tushar became happy.'
    (lit.: To Tushar happiness happened.)

    c. tuSaar-ko caand dikhaa.
    Tushar-DAT moon-NOM see/become visible-PERF
    'Tushar saw the moon.'
    (lit.: To Tushar the moon appeared.)

Whereas these examples are perfective constructions, which lack ho 'be' (see footnote 19), the perfect counterparts behave in the same way. This indicates that the dative marker, instead of the ergative marker, appears in the perfective/perfect constructions when the verb is not agentive/causative.

The sensitivity of Hindi ergative Case to agentivity/causativity can be further supported by regular transitive perfect counterparts in (75):
(75) a. tuSaar-ne caand dekh-aa.
Tushar-ERG moon see/look at-PERF
'Tushar saw the moon.' (Mohanan (1994: 142))

b. lerke-ne billi dekh-ii hai
boy-ERG cat see-PERF aux
'The boy has seen a cat.'
(Palmer (1994:58), originally from Allen (1951:70))

The contrast of Case between (74c) and (75a, b) is striking given their near synonymy. Unlike (74c), however, (75a, b) imply agency (volition).

Under the present system of s-syntax, this correlation between ergative Case and the agent/causer role can be structurally captured as the association between ergative Case and the Spec position of the Spec-\(\nu\)-VP configuration, which gives rise to an agentive/causative interpretation. However, the ergative Case checking principle (72) only says that in Hindi, the ergative Case feature is checked by F \([L]\). Then, how does the association between ergative Case and the Spec position of the Spec-\(\nu\)-VP configuration follow?

The answer is this. In Hindi, subjects are overtly Case-marked (e.g. genitive and dative) in non-agentive/non-causative constructions (namely, except transitive and unergative constructions). Since these marked subject constructions contain no agent/causer introduced, they are characterized, in the present theory, as lacking the Spec-\(\nu\)-VP

28 Closer examination of the verb forms reveals that \(dikh\) in (74c) is intransitive while \(dekh\) in (75) is transitive. The transitivity alternation is reflected in the above glosses (see also McGregor (1995)): \(dikh\) is glossed as 'see/become visible' while \(dekh\) is glossed as 'see/look at'.

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configuration. If ergative Case checking takes place in these constructions, the subject must be overtly marked by both the ergative marker and the genitive or dative marker. This double overt marking should be, in general, ruled out anyway. Therefore, the structures that survive are those in which the subject is not associated with any Case but ergative Case. These are unmarked subject constructions; they are exactly those that contain the Spec-\textit{v}-VP configuration (transitive and unergative constructions) which gives rise to an agentive/causative interpretation.

4.6 (Apparent) Thematic Relatedness of L-functor Cases

I have proposed that genitive Case and ergative Case are 1-functor Cases. L-functor Cases are instances of the features that are checked during the derivation. In this sense, 1-functor Cases are non-distinct from structural Cases. L-functor Cases are, however, related to the relational interpretation, which is the essential property of the relational 1-functors that we have been examining. In section 4.6.1, I recapitulate the semantic relevance of genitive Case. In section 4.6.2, I elaborate on the apparent correlation between ergative Case and the agent/causer role. Then, in section 4.6.3, based on the interpretability of features (Chomsky (1995)), I suggest a feature-checking theoretic account of 1-functor Case and the NLLP. In section 4.6.4, I briefly discuss a

\footnote{This does not seem to be a universal condition, however. See Plank (1995).}
consequence of making a distinction between inherent Case and 1-
functor Case.

4.6.1 D and Genitive Case

D's genitive Case is not correlated with a specific θ-role like goal in
the traditional sense. The genitive marked argument can assume just
about any role. A (traditionally not well-defined) notion such as
possession might apply to the relation between John and cat in John's cat
but does not extend to an example like John's purchase.

This might appear to be consistent with the view that the genitive
Case checked by possessive D is structural (as in Chomsky (1981)). If
genitive Case is structural, however, we cannot account for the fact that
something like Chomsky's (1986b) Uniformity Condition holds of genitive
Case. Consider (20), repeated in (76), again:

(76) [DP *John's, D belief [t, to be incompetent]]

The ill-formedness of (76) is explained in the 1-functor-based analysis of
possessive D as I have argued earlier. Since possessive D is a relational 1-
functor, its Spec and its complement must be in some relation. In (76),
however, the Spec of DP John and D's complement NP do not have any
conceivable semantic relation that can be characterized as central
coincidence. Therefore, they cannot be related by possessive D. In other
words, a relational configuration cannot be assigned to (76).
The present analysis explains a general correlation between the 'possessee' and the 'possessor', depending on the notion of central coincidence associated with the relational configuration.

4.6.2 Ergative Case

Next, consider ergative Case. As outlined in section 4.5, Hindi present tense sentences and habitual past sentences never exhibit ergative Case on subjects even if main verbs are agentive/causative:

(77) a. laRkaa patr likh-taa hai.
    boy letters write-IMPERF.M.SG is
    'The boy writes letters.'

b. raam roTii khaa-taa thaa
    Ram bread eat-IMPERF.M.SG was
    'Ram (habitually) ate bread.'

These examples indicate that Hindi ergative Case is correlated with the semantic import of perfect aspect. This correlation is captured by the present theory which permits a relational interpretation of the projection headed by an empty relational 1-functor F. The relational property of F derives the R-state reading that constitutes a crucial semantic component of perfect aspect.

Another advantage of our analysis appears when intransitive perfect/perfective clauses are examined more carefully than in section
4.5.1. Consider the examples discussed in footnote 18, repeated here:

   (78) a.  laRke ne  khana kha-yaa.
       boy   ERG food   eat-PERF.M.SG
      The boy ate his meal.

   b.  aurte  baazaar  ga-yii.
      women bazaar  go-PERF.SG
      'The women went to the bazaar.'

Just as in the perfect construction, intransitive verbs do not appear with an ergative subject in the perfective construction. Thus, consider the following examples:

   (79) a.  raam  gir-aa.
       Ram(NOM) fall-PERF
      'Ram fell hard.'

   b.  *raam-ne giraa.

      (Mohanan (1994:71))

The single argument in (79a) is zero-marked (nominative) and cannot be ergative-marked, as in (79b).

There are, however, intransitive sentences in which the argument is ergative-marked, as in (80):

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30 Most examples involve the perfective (instead of the perfect) construction because of the shortage of relevant examples for the perfect construction. The following discussion is, however, expected to hold of the perfect construction as well. In footnote 26, I assumed that the perfective construction has an empty relational I-functor just as in the perfect construction.
Furthermore, either nominative or ergative Case is permitted in some intransitive sentences, as in (81):

(81) raam/raam-ne jor-se cillaa-yaa.
    Ram(NOM)/Ram-ERG loudly shout-PERF
    Ram shouted loudly.

This demonstrates that ergative Case is not strictly dependent on the transitivity of verbs.

Concluding that ergative Case cannot be consistently associated with transitivity, Mohanan (1994: 72 ff.) suggests that ergative Case is marked on the argument that is associated with the semantic property that she calls conscious choice of performing the action. Thus, in (81), the nominative-marked argument does not have a conscious choice of shouting, that is, Ram inadvertently shouted loudly. In contrast, the ergative-marked argument in (81) implies that Ram chose to shout loudly. To further support this association, Mohanan gives the following examples:
In (82a), the first sentence forces the non-volitional interpretation of the action in the second sentence. This interpretation is reflected in the well-formedness of the nominative subject and the ill-formedness of the ergative subject. In (82b), the adverbial expression *jaan buujhkar* 'deliberately' imposes a volitional reading on the sentence, which is reflected in the acceptability of the ergative, but not the nominative, subject.

Further, Mohanan gives the following pair:

(83) a. raam jaan-taa th-aa ki siitaa
Ram(NOM) know-IMPERF be-PERF that Sita(NOM)
bahut bimaar hai.
very ill be-PRES

'Ram knew that Sita was very ill.'
b. raam-ne jaan-aa ki sittaa bahut
Ram-ERG know-PERF that Sita(NOM) very
bimaar hai.
ill be-PRES
'Ram found out that Sita was very ill.'

(83a, b) share the same main verb *jaan* 'know' but differ in the Case of the subject (as well as aspect). The nominative subject in (83a) is correlated with the stative and thus non-volitional, meaning of the sentence. In contrast, (83b) only denotes a dynamic event of the deliberately acquiring of knowledge, which is again correlated with the ergative subject.

To account for this semantic property of ergative Case, Mohanan employs a theory of LFG. Mohanan’s theory postulates three independent levels of representation: semantic structure, argument structure, and the structure of grammatical function. Under this theory, Mohanan (p. 77) proposes that the meaning of conscious choice is associated with the argument that is associated with the subject function and ergative Case when the predicate is associated with perfective aspect. This is illustrated as follows:

```
(84) [conscious choice] SEM STR
    < ARG... > PRED ARG STR
       \    /  
       SUBJ
      /  
    ERG PERF GF STR
```

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Mohanan (p. 75), however, gives counterexamples to her notion of conscious control, such as (85), which indicate that an inanimate causer argument may appear in ergative Case:

(85) a. havaa ne patte bikher diy-e the.
   wind ERG leaves(NOM) scatter give-PERF be-PAST
   'The wind had scattered the leaves.'

b. baadalo ne suuraj-ko gher liy-aa hai.
   clouds ERG sun-ACC surround take-PERF be-PRES
   'The clouds have surrounded the sun.'

c. tuufaan ne SiiSaa tod diy-aa.
   storm ERG glass(NOM) break give-PERF
   'The storm broke the glass.'

Our analysis can explain the distribution of ergative Case in a more restrictive way. Ergative Case is properly licensed only when the perfect 1-functor F cooccurs with the otherwise unmarked subject constructions, whose subjects are agentive/causative arguments (the Spec in the Spec-v-VP configuration) in Hindi. In short, Ergative Case comes out as an elsewhere Case. Therefore, the distribution of ergative Case is identical to the distribution of the agent/causer argument, that is, the distribution of the Spec-v-VP configuration.

The Spec-v-VP configuration appears in causative transitive constructions and unergative constructions. Thus, the analysis predicts that ergative Case appears with unergatives such as *nahaa 'bathe' in (80) and causatives such as *bikher 'scatter', *gher 'surround', and *tod 'break' in (85). The same kind of unification of transitives and unergatives in
Basque is claimed by Laka (1993). These support the conflation of an agent and a causer. It is also predicted that ergative Case may not appear with unaccusatives such as *gir* 'fall' in (79b).

If we can generalize the Spec-*v*-VP configuration to all the volitional subject construction in Hindi such as the agentive counterparts in (81-83), our analysis will capture the apparent relation between ergative Case and agency/causation without postulating non-syntactic levels of representation. As a matter of fact, I have reached a conclusion that there is no direct relation between ergative Case and agency/causation. The relation falls out as an elsewhere case.  

The only semantic role that the ergative argument must have in the present theory is the role of a participant in the relation of central coincidence, because the ergative argument occupies the Spec of a relational 1-functor (which corresponds to *have*).

### 4.6.3 Interpretability of Case Features

How can these semantic properties of 1-functor Cases formulated in feature checking theory?

Chomsky (1995: 276) introduces the notion of the interpretability  

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31 The semantic characterization of Hindi ergative Case is far from conclusive, however. For example, not all inanimate causer arguments are totally compatible with ergative Case, as illustrated by (i), cited from Mohanan (1994):

(i) ♣♣patthar ne SiiSaa tod diy-aa.
    stone ERG glass(NOM) break give-PERF
    'The stone broke the glass.'

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of features. For example, the φ-features of nominals are interpretable (e.g. compare we [1 person] versus airplane [3 person]) whereas the φ-features of functional heads like 𝑩° are non-interpretable. (Structural) Case features are generally uninterpretable, no matter whether they are associated with nominals or heads. Uninterpretable features must be eliminated before LF due to the Principle of Full Interpretation (FI). FI forces feature checking and, therefore, movement (Attract/Move).

By refining the interpretability of Case features, the distinction between structural Case and l-functor Case (genitive and ergative Cases) could be derived from feature-checking theoretic terms. Following a suggestion by Michael Rochemont (p. c.), I propose that just like φ-features, the l-functor Case features of nominals are interpretable while the same features of l-func tors are non-interpretable. The interpretability of the l-functor Cases of nominals presumably stems from the origin of l-functor Cases, that is, inherent Cases. Inherent Case markers in effect signal the semantic role of the argument that they attach to. I assume that as interpretable features, the l-functor (genitive and ergative) Case features assign the role of a participant in the relation of central coincidence to the arguments that they are associated with.

As we have just seen, the genitive-marked Spec argument of possessive D is interpreted exactly as such. In contrast, the ergative-marked Spec argument of the null l-functor F (which correspond to have) is interpreted as the agent/causer but this follows independently. As we have pointed out, in Hindi, all non-agentive/non-causative arguments
that can be raised to Spec of FP are overtly marked with some overt Case-marker (e.g. dative and genitive). Prohibiting multiple overt Case-marking in Hindi, it follows that the (overt) ergative Case marker can be only suffixed to the agentive/causative unmarked (nominative) argument. Thus, the association of the agentive/causative role with ergative Case is derived as an elsewhere case.

4.6.4 NLLP

From the point of view of the interpretability of the 1-functor Case of nominals, I reconsider the NLLP and speculate how it could be reduced to a more general principle of recoverability.

Being interpretable, the 1-functor Case feature of nominals are not eliminated after checking. I have suggested that the nominal that is associated with an 1-functor Case feature is interpreted as a participant in the relation of central coincidence. It seems natural that interpretable features tend to be associated with some phonologically overt forms.

L-functor Case, which is interpretable when associated with nominals, is overtly marked. I have given an account of why 1-functor Case is overt, on the basis of the NLLP: an empty 1-functor must overtly encode its Case property in the Spec position. The NLLP could be related to the interpretability of the 1-functor Case feature of nominals. The 1-functor Case feature of nominals is (or at least tends to be) overt because such interpretable features are often associated with some phonologically
Given this, the NLLP can be reduced to a general recoverability condition of Spec-head configurations, like Sportiche's (1996) Doubly filled Voice Filter:

\[(86) \quad \left[\ast_{HP} \text{XP} [H]\right]\]

where H is a functional head and both XP and H overtly encode the same property P.

The property P for l-functors is the relational interpretation. Due to the overtness condition on the interpretable l-functor Case feature, XP is overtly marked. Then it follows from (86) that the head must be null.

This attempt of reducing the NLLP to the recoverability of Spec-head configurations and the interpretability of features can be extended to wh-phrases (Chomsky and Lasnik (1977); see also Rizzi (1990) and May (1985)). Notice that (86) only ensures that there is no 'doubly-filled' HP. It does not matter whether the Spec is overt or the head is overt. But the facts concerning wh-phrases are more restricted: wh-features, but not C, are overt. This restriction, the residue of (86), could be accounted for if the wh-features of nominals, being interpretable, needs

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32 Also, inherent Cases, which are related with \(\theta\)-roles, tend to be overtly marked.

33 LF-raising of wh-phrases is irrelevant since at issue is the phonological overtness. This leads to a prediction that wh-phrases and C may be both overt if wh-movement is not overt. Japanese supports this prediction. For recent issues of LF-movement, see Chomsky (1995; the Move F theory).
to be overt.  

4.6.5 Inherent Case Generalization

Before closing section 4.6, I point out one implication of the present analysis of Case. The present analysis bases inherent Case marking on an I-syntactic stative/relational configuration. This has a general consequence, namely, (87):

(87) Inherent Case is marked only by a stative/relational head.

Something like (87) cannot hold in Hindi if we assume that ergative Case is inherent (Mahajan (1990) and Mohanan (1994)). The present theory has departed from this assumption. Although ergative Case appears to be correlated with the agent/causer role, I have demonstrated that this correlation is derived from independent properties in Hindi. Excluding ergative Case from a list of inherent Case has made generalization (87) possible.

Generalization (87) predicts, for example, that there is no inherent Case which is associated with a patient argument, because the patient argument could be defined with reference to an eventive head. This prediction seems to be correct, although it remains to be examined extensively.

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34 The clitic constructions are different. In Sportiche’s (1996) analysis, clitics are the heads of the Voice phrases. The Spec XP or the clitic head may be overt. Namely, (86) is sufficient for the clitic constructions. There might be a difference between wh-features and ϕ-features, which spell out as clitics.
4.7 Japanese Experiential Transitive Constructions

In Chapter 3, I have proposed that a complex relational structure headed by an I-functor *have* (with another relational I-functor) accounts for the experiential interpretation of the *have*-VP constructions in English. The present theory of I-functors predicts that the following I-functor structure is available in English:

(88) Experiential *have*-VP: based on complex *have* (and *on*)

\[
\begin{array}{c}
\text{F}_1' \quad \text{F}_2' \\
\text{F}_1 \\
\text{have} \quad \text{VP} \\
\text{F}_2 \\
\text{DP}_1
\end{array}
\]

E.g.: John had his students walk out of class (on him).

In this section, I discuss Japanese experiential transitive constructions. These constructions are apparently unrelated to the English *have* VP constructions but I show that they are semantically similar. To capture the similarity, I extend the I-functor oriented analysis of the *have* VP construction to the Japanese experiential transitive constructions. The analysis leads to the assumption that empty I-functors are less restricted in this language. I tentatively parametrize the
NLLP so as to take morphologically overt Case as a licenser of an l-functor even if the Case is structural.

4.7.1 Data

The experiential-subject property of the following sentences has been pointed out in the literature (e.g. Inoue (1976) and Amano (1995)):

(89) a. Yuuji-ga kyoosi-ni nagur-are-te maeba-o
   Yuji-NOM teacher-by hit-PASS-and front tooth-ACC
   or-ta
   break(TR)-PAST

   'Yuji was hit by the teacher and had his front tooth broken.'

b. Watashi-tachi-ga kuushuu-de
   I-PL-NOM air raid-by
   kazai-doogu-o minna
   household belongings-ACC all
   yak-te-sima-ta
   burn(TR)-TE-REGRET-PAST

   'We had all the household belongings burnt by the air raid.'

---

35 The first VP conjunct in (89a) serves to express the cause of the following event denoted by the second conjunct and in effect forces an experiential reading of the second conjunct.
The relevant main verbs in (89) are all (lexical or derived) causative. In (89a, b), or and yak are both lexically causative, and in (89c), the intransitive stem tob forms the lexical causative verb tob-as. These sentences, however, lack a causative reading. Amano (p.154) observes that these sentences are semantically similar to those in (90) which are formed with the corresponding intransitive verbs:

(90) a. Yuuji-wa kyoosi-ni nagur-are-te
Yuji-TOPIC teacher-by smash-PASS-and
maeba-ga ore-ta.
front tooth-NOM break(INTR)-PAST
'Yuji was hit by the/a teacher and had his front tooth broken.' (lit.: As for Yuji, he was hit by the teacher and his front tooth broke.)

b. Watashi-tachi-wa kuushuu-de
I-PL-TOP air raid-by
kazai-doogu-ga minna
household belongings-NOM all
yak-e-te-sima-ta.
burn-INTR-TE-REGRET-PAST
'We had all the household belongings burnt by the
air raid.' (lit.: 'As for us, all the household belongings
burned because of the air raid."

c. Kinodokunimo tanaka-san-wa kinoo-no
pitifully Tanaka-Mr/Ms-TOP yesterday-GEN
taihuu-de yane-ga tob-ta-sooda.
typhoon-by roof-NOM fly-PAST-HEARSAY
'I hear that, pitifully, Mr/Ms Tanaka had the roof
blown away by yesterday's typhoon.' (lit.: Pitifully, as
for Mr/Ms Tanaka, the roof flew (away) because of
yesterday's typhoon.)

Notice, however, that the verbs in (90) can have true causative
interpretations. This indicates that the construction is in fact
ambiguous between an experiential and a causative interpretation.
Consider the following examples which lack the phrases that induce
experiential meaning:

(91) a. Yuuji-ga maeba-o or-ta.
Yuji-NOM front tooth-ACC break(TR)-PAST
'Yuji (intentionally) broke his front tooth.'

b. Watashi-tachi-ga kazai-doogu-o minna
I-PL-NOM household belongings-ACC all
yak-ta.
burn(TR)-PAST
'We burned all the household belongings.'

c. Tanaka-san-ga yane-o tob-as-ta.
Tanaka-Mr/Ms-NOM roof-ACC fly-CAUS-PAST
'Mr/Ms Tanaka flew the roof.'

This ambiguity parallels the ambiguity of the English causative/experiential have-VP construction, for example, John had the students walk out of class.

Amano points out that the experiential transitive construction in (89) meets two conditions. First, the main predicate is a transitive verb that, in Amano's terms, expresses both the activity of the subject and a change of the state of the object. In the present framework, these verbs are verbs that participates in the causative/unaccusative alternation, as illustrated by the following paradigm from Hale and Keyser (1994):

(92) a. The screen cleared.
    b. John cleared the screen.

(93) a. The broth thickened.
    b. The cook thickened the broth.

The causative verbs in this paradigm express both an activity of the subject and either a change of state or a resulting state of the object.

The second condition Amano discuss is that in the experiential transitive construction, the subject argument possesses the object argument. Consider the following example (adapted from Amano (p. 160)): 324
(94) Ogawa-shi-ga rakurai-de ki-o yak-ta
Ogawa-Mr-NOM lightening-by tree-ACC burn(TR)-PAST
'Mr. Ogawa had a/the tree burnt by lightening.'

As Amano indicates, (94) is ill-formed if, for example, Mr. Ogawa happened to see a tree struck by lightening during his travel. In such a situation, there is no possessive relation between Mr. Ogawa and the tree.

As Amano also points out, the possessive relation in question is not inalienable possession, which does not hold of (91b, c). In (91b), for example, the relation between the referents of watashi-tachi 'we' and household belongings is not inalienable possession. The relation is such that an influence on the possessee has some effect on the possessor. This 'close' relation can be a possible implication for all possessive relations. If so, the possessive relation observed in the Japanese experiential transitive construction again parallels the possessive relation observed in the English have-VP construction. For example, in the sentence John had his students walk out of class, the relation between John and his student is close enough for John to be affected but it is not necessarily inalienable possession.

4.7.2 Japanese Causative/transitive

Before giving an analysis of the Japanese experiential transitive construction, let us briefly consider the structure of Japanese causative transitive constructions. In the present framework, we can analyze
transitivizing morphemes as (causative) \( v \).\(^{36}\) Japanese transitivizing morphemes can be a zero form as in \( yak-o \) 'burn' and \( or-o \) 'break', or as in \( tob-as \) 'cause to fly'. I assume that (i) \( tob \) is an eventive head that selects an argument (theme), (ii) the eventive projection surfaces as (Spec-less) VP, and (iii) the VP is selected by \( v-as \) and supplied a subject (agent/causer). Thus, a transitive verb \( tob-as \) in a simple example like (95a) is associated with the structure in (95b). I assume, for concreteness, that Japanese is a head-final language (cf. section 2.8.3):

(95) a. Taihuu-ga yane-o tob-as-ta

\( \text{typhoon-NOM roof-ACC fly-CAUS-PAST} \)

'The typhoon caused the roof fly (away).'</a>b. \[
\begin{align*}
\text{DP} & \quad vP \\
\text{taihuu-ga} & \quad \text{VP} \quad v \\
\text{DP} & \quad V \quad -as \\
\text{yane-o} & \quad \text{tob}
\end{align*}
\]

\(^{36}\) Japanese has two kinds of causative: lexical/synthetic and syntactic/analytic. At issue here is the lexical causative. The syntactic causative has no experiential interpretation. Harley (1995) considers a lexical causative head (what I call \( v \) here) to belong in 1-syntax. Based on this, she assumes that the experiential meanings that may arise in lexical causatives are lexical idiosyncratic phenomena. As Harley herself and I point out, however, the experiential interpretation in question is similar to the one that the English \textit{have} construction may have. The similarity cannot be captured in Harley's analysis. My analysis to be proposed gives a unified account of the Japanese experiential transitive and the English \textit{have} VP construction.
4.7.3 Experiential Transitives as Headed by L-functors

Let us return to the Japanese experiential transitive construction. We have seen in section 4.7.1 that this construction parallels the English have VP construction in showing ambiguity and is semantically similar to the experiential interpretation of the have-VP construction. To account for these properties, the null hypothesis is to extend the analysis of the English have VP construction to the Japanese experiential transitive construction. Therefore, the experiential interpretation of (89c) can be derived from the (head-final) complex relational l-functor configuration, given in (96):

(96) \[ \begin{array}{c}
\text{DP} \\
\text{Spec} \\
\text{Compl}
\end{array} \quad \begin{array}{c}
F_2' \\
F_2 \\
F_1 \\
F_0\end{array} \quad \begin{array}{c}
F_1' \\
F_1 \\
F_0\end{array} \]

Japanese lacks an overt counterpart of have and employs an empty head for F_1. Recall that I have assigned the following structure to account for the experiential interpretation of John had his students walk out of class:
In (97), $F_1$ introduces a specifier argument and takes $F_2P$ as a complement. $F_2$'s specifier is $vP$ and $F_2$'s complement is a covert argument ($pro$). $Pro$ is bound by the specifier of $F_1P$ ($John$), due to the Specifier Binding Condition. Applying this structure to a sentence such as (98a) gives rise to the structure in (98b):

(98) a. Tanaka-san-ga yane-o tob-as-ta
    Mr/Ms Tanaka-NOM roof-ACC fly-CAUS-PAST
    'Mr/Ms Tanaka had the roof blown (away).'
(98b) derives the experiential interpretation in exactly the same way as in the English experiential *have* VP counterpart. The vP denotes an event in which something blows away the roof. At the F$_2$P level, this event (the roof blown away) denoted by vP is related to pro$_i$. The relation is central coincidence. A most natural interpretation in this case would be that pro$_i$ experiences the event. At the F$_1$P level, *Tanaka-san* 'Mr./Ms Tanaka' is related to the denotation of F$_2$P. Because *Tanaka-san* binds pro$_i$ due to the Specifier Binding Condition, it follows that *Tanaka-san* is the person who experiences the event denoted by vP. The derived interpretation of (99b) is, therefore, that *Tanaka-san* is in a relation of central coincidence with the relation denoted by F$_2$P in which *Tanaka-san* experiences the blowing away of the roof. One traditional way of interpreting this
complex relation is that Mr/Ms Tanaka experiences the event denoted by \( \text{vP} \).

4.7.4 Licensing of L-functors and Overt Structural Case

Let us consider the formal licensing of l-functors. In (98b), it is not entirely clear how the two empty l-functors can be feature-checked. It seems that Japanese l-functors are subject to a version of the NLLP in a different way from Hindi l-functors.

In the discussion of the Hindi ergative-perfect construction, we have observed a case in which an l-functor is licensed by the phonologically overt ergative Case of an argument in the l-functor's specifier position. This suggests a possibility that licensing of \( F_1 \) and \( F_2 \) in (98b) above depends on phonologically overt Case particles -\( ga \) and -\( o \) in Japanese. In (98b), \( F_1 \) is in the Spec-head relation to a overt form -\( ga \).\(^{37}\)

In the feature-checking theory that I am assuming, \( \text{vP} \) attracts V and Vs argument for checking the accusative Case features. This gives rise to the following sub-structure:

\(^{37}\) The Spec-head relation in the sense relevant to the NLLP should not be confused with Case checking. The nominative Case feature of the \( ga \)-marked DP is checked by I.
In (99), the accusative DP is the specifier of the specifier of F₂. Following the spirit of Kayne's (1994) analysis of specifiers (and also Reinhart (1987)), I suggest (rather hesitantly) that the Spec S₁ of the Spec S₂ of FP is in some relation to F in such a way that some property of S₁ is percolated up to S₂, which is directly in a local relation to F. Based on this relation, the Japanese version of the NLLP can be formulated as follows:

(100) Null L-functor Licensing Principle (Japanese)

A null 1-functor F is licensed if the Spec of F overtly encodes some property P, P=structural Case.

Due to this version of the NLLP, F₁ and F₂ in (98b) can be licensed by being in a local relation with the nominative Case marker -ga and the
accusative Case marker -o, respectively. The present analysis could be extended to certain type of topic constructions in Japanese. Consider the following example:

(i) Zoo-wa hana-ga nagai.

\text{elephant-TOPIC nose/trunk-NOM long}

'As for an elephant, its trunk is long.'

Since \textit{hana} ‘trunk’ is a relational noun, it has an implicit argument that is bound by \textit{zo} 'elephant'. Assuming that this kind of topic is a specifier argument of an empty relational \textit{l}-functor \textit{F}, the binding relation follows from the Specifier Binding Condition. \textit{F} satisfies the NLLP because it is locally associated with the topic marker -\textit{wa}.

The following examples are similar to the experiential transitive construction in that they have a causative/transitive verb but are assigned an experiential interpretation:

(i) Taroo-ga tokoya-de kami-o kar-ta.

\text{Taro-NOM barber-LOC hair-ACC cut-PAST}

'Taro had his hair cut at a barber shop.'

(ii) Mariko-ga byooin-de chi-o nuk-ta.

\text{Mariko-NOM hospital-LOC blood-ACC extract-PAST}

'Mariko had her blood taken out in a hospital.'

(iii) Rumi-ga kensa-de rentogen-o tor-ta.

\text{Rumi-NOM examination-LOC X-ray-ACC take-PAST}

'Rumi had an X-ray taken in an examination.'

These sentences denote an activity which is typically carried out by a professional such as a barber or a doctor (see Babby (1993) for a similar construction in Russian).

In these sentences, however, the possession relation between the subject and the object arguments is tighter than the one observed in the Japanese experiential transitive construction. In (i, ii), the relation is inalienable. In (iii), the relation is forced by the relational noun \textit{rentogen} X-ray.

This tighter relation is reminiscent of the relation observed in the following English examples:

(iv) a. John broke his arm.

b. Mary grew her hair.

These sentences in (iv) may have an experiential interpretation, which forces the inalienable possessive relation between the subject and the object arguments. I leave open the analysis of these constructions for further research.

Also relevant to the present analysis are ‘indirect’ passives in Japanese and in Cantonese:

(v) Taro-ga saifu-o nusum-are-ta.

\text{Taro-NOM wallet-ACC steal-PASS-PAST}

'Taro had his wallet stolen.'

(vi) a. John bei a Paul touh-jo ga che.

\text{NC John BEI NC Paul steal-PERF NC car}

'John had his car stolen on him by Paul.'
For discussions related to (v), see Hasegawa (1988), Terada (1990), Hoshi (1991), and references cited therein. For (vi), see Li (1997). In the present analysis, these constructions could be analyzed as employing an 1-functor headed by a passive morpheme and the two empty 1-functors that constitute the experiential interpretation of the have construction in English. Thus, (v) may be assigned the following structure:

(vii)

\[
\begin{array}{c}
F_jP \\
| \\
Taro-ga, F_jP \\
| \\
F_{j+1}P \\
| \\
F_{j+2}P \\
| \\
F_{j+3}P \\
\end{array}
\]

The experiential (or adversative) reading follows from (a) the central coincidence relation between \(F_{j+3}P\) and \(pro\), mediated by \(F_{j+2}\) and (b) the binding of \(pro\) by Taro-ga. (a) gives rise to an experiential reading because the relation is between an event and a person. Due to (b), the experiencer is Taro.

Syntactically, since \(F_{j+3}P\) is a regular passive structure, the accusative DP cannot be Case-checked by \(v\). It is possible to assume that \(F_j\) can check accusative Case just like its overt counterpart have. Then, the accusative Case feature of the object argument in (vii) is checked by \(F_j\) when the argument is LF-raised to a Spec of \(F_jP\).

An interesting implication of this analysis is that I can maintain the strong hypothesis that a passive morpheme invariantly 'absorbs' the accusative Case feature of a verb (cf. footnote 44 in Chapter 2). This is possible because the present analysis reduces the transitive property of adversative passives to the independently motivated relational 1-functor (\(F_j\) in (vii)). Traditional approaches (e.g. Hasegawa (1988) and Terada (1990)) associate two different properties to the passive morpheme.
4.8 Conclusion

This chapter has proposed that possessive D is an empty 1-functor that is structurally identical to 1-functor have. A prediction is that there are two kinds of configurations that can be associated with possessive D: the complex stative configuration for inalienable possession and the simplex stative configuration for alienable possession. As has been demonstrated, this prediction is borne out by the fact that possessive D can be associated with the two types of possession that parallel those associated with have.

I have proposed the system of Case checking by 1-functors. I have given an account of the Case and thematic properties of the genitive subject in possessive nominals and the Hindi genitive subject construction. I have also proposed the system of inherent Case marking, which depends on 1-syntactic and morphosyntactic information of heads.

In addition, I have examined the Hindi perfect construction. I have analyzed it in the same structural way as the English perfect construction. I have explained the two significant properties of ergative Case in the Hindi perfect construction, the apparent semantic property of ergative Case and its morphological overtness.

Furthermore, I have explored to relate the semantic and morphosyntactic properties of 1-functor Case to the interpretability of

It remains to properly constrain empty 1-functors in Japanese (relating them to overt structural Cases in the main text is a first approximation).
features.

Finally, I have examined the Japanese experiential transitive construction. To account for its semantic properties, I have extended the configurational account for the English *have* VP construction. I have made a speculation concerning the correlation between empty l-functors in Japanese and the overtness of structural (nominative and accusative) Case in this language.
5.1 Introduction

In this concluding chapter, I summarize what the present theory has achieved and address remaining questions.

5.2 Summary

5.2.1 L-syntax

Following Hale and Keyser (1993), I have taken l-syntax as a version of argument structure. I have advanced a specific model of grammar and situated l-syntax in it as the interface of the lexicon, morphology and A-syntax, as illustrated by (1):

(1)

L-syntactic structure is derived from the comprehensive lexical-semantic level of representation (i.e. LCS). The crucial property that determines this derivation is the event-state-entity contrast. Following Déchaine
(1996), I have assumed that an eventive head projects a head-complement structure, a stative head projects a spec-head-complement structure, and that an entity head projects no projection. This is a specific claim on which semantic properties contribute to the determination syntactic structure. I am claiming that these properties are not θ-roles, not delimitedness, but the event-state-entity contrast.

I have also examined the implications of the theories of l-syntax to inherent Case. I have proposed that inherent Case determination depends both on l-syntactic configuration and morphosyntactic realization. The dependence of inherent Case on l-syntactic configuration accounts for the traditional association between inherent Case and θ-roles. The proposal that inherent Case relies on morphosyntactic realization permits language variation in inherent Case under the assumption that morphosyntactic realization is subject to language variation.

5.2.2 L-functors

Another central topic of this thesis is l-functors. I have proposed a theory which makes it possible for certain lexical items to be inserted in s-syntax. One of the essential proposals is the Functionalization Principle, which permits a lexical head to become an l-functor, namely to project a functional projection, if and only if the meaning of the head is represented by l-syntactic structure without any extra semantic features. Constrained further by the theory of feature checking and the Condition
of Inclusiveness, l-functors such as a passive morpheme -en and have give rise to various constructions. The examples range from adjectival and verbal passives (e.g. Mary is very pleased and The glass was broken by Bill), to causative/experiential constructions (e.g. John had his students walk out of class), and to perfect constructions (e.g. Lucie has advised the prime minister).

I have also related null l-functors to phonologically overt Cases such as genitive Case and ergative Case, which I called l-functor Case. On the one hand, I have reduced l-functor Case marking to feature checking. This makes l-functor Cases look like structural Cases. I have suggested, however, that l-functor Cases are correlated with the notion of central coincidence, the meaning represented by the spec-head-complement configuration of l-functors. L-functors are semantic only to the extent that the meaning is syntactically represented.

On the other hand, I have proposed a version of the condition of recoverability of Spec-head configurations, the Null L-functor Licensing Principle. The leading idea of the NLLP is that when a head is null, the entire projection is identified through its Spec (Sportiche (1996)). L-functors are just one of the elements that are subject to this general recoverability condition.

5.3 Implications of the Theory of L-functors: Residual Questions

There are a number of remaining questions for the theory of l-functors outlined in this thesis. I raise five important questions which I
have in mind. I believe these questions help to develop a fully explanatory theory of l-functors:

(2)  a. Why do l-functors exist?
     b. Why can only purely structural heads become l-functors?
     c. What does the theory of l-functors imply for what is often called grammaticalization (e.g. to as an inflection (or tense))? (Cf. Heine, Claudi, and Hunnemeyer (1991) and Hopper and Traugott (1993).)

(3)  a. Are all l-functors relational?
     b. Are there (non-null) nominal l-functors?

The questions in (2) are general questions which urge further development of the theory of l-functors. Those in (3) are more specific questions which have not been addressed so far. I briefly discuss them in turn.

Why are l-functors necessary after all? The following considerations might help answer the question. On the one hand, meanings that human beings can control can be extremely complex. On the other hand, s-syntax is severely restricted by UG. The inventory of primitives are kept small: primitives are limited to a handful of features (or, derivatively, categories such as C, I, v, D; and N, V, P, A). The options that combine these primitives are constrained to the extreme (e.g. Merge and Attract/Move). Because of their restrictiveness, these wired-in tools might not be able to express all the complex meanings.
It is not inconceivable to assume that to deal with the situation, UG is designed to take a minimal step, when forced by data, to expand the vocabulary in s-syntax: it makes it possible for already existing lexical heads to assume an additional function (i.e. l-functor). L-functors can head a functional projection which expands a clausal structure and gives rise to, e.g. s-syntactic passives and (periphrastic) causative/experiential constructions.

A general theoretical picture of l-functors is that UG has an inventory of possible functional categories whereas the Functionalization Principle permits the enrichment of the vocabulary of functional categories in language-specific ways.

The question (2b) *Why can only purely structural heads become l-functors?* seeks the reason for the Functionalization Principle. The answer might lie in general properties of functional categories. Presumably, such properties are incompatible with non-structural semantic features.

When we consider further implications of the analysis of l-functors, we can ask the question of grammaticalization in (2c) as a guideline. The preposition *to* can be counted as purely structural if endpoint coincidence is reduced to l-syntactic structure. Then *to* qualifies as a potential l-functor. The l-functor *to* might have lost its lexical feature and developed into 1° during the historical development of English.

The question (3a) *Are all l-functors relational?* is directly related with the question of whether *do* can be an l-functor or not. In the present
theory of l-syntax, *do* may occupy a head position of an eventive (head-complement) structure:

(4) \[
\begin{array}{c}
x \\
\hspace{1cm} x \\
\hspace{2cm} x \\
\hspace{3cm} do
\end{array}
\]

E.g. Mary did her new song.

Therefore, the l-functor *do* would project a head-complement configuration in s-syntax. This is, however, unlike most functional categories which project specifiers (with *be* as a potential exception. See section 2.8.1, Chapter 2). But suppose that the subject of *do* is supplied by another functional category, which could be *I* or *v*, as illustrated by (5):

(5) \[
\begin{array}{c}
XP (=IP or vP) \\
\hspace{1cm} DP \\
\hspace{2cm} X' \\
\hspace{3cm} X \\
\hspace{4cm} FP \\
\hspace{5cm} F \\
\hspace{6cm} YP \\
\hspace{7cm} do
\end{array}
\]

When \(X=I\), *do* might function as a dummy auxiliary as in the Present-day English. When \(X=v\), *do* might give rise to indirect causation just like *have*. The latter option might have been taken in Middle English, in which *do* can be causative:

(6) a. Thi soul-cnul ich wile do ringe.

thy soul-knell I will do ring

'I will cause someone to ring your soul knell.'
b. He dede meyk a newe trone.

he did make a new throne

'He caused someone to make a new throne.'

(Williams (1975: 272))

Finally, let us consider the question (3b) Are there (non-null) nominal l-functors? I have proposed that possessive D is an l-functor. D is a kind of (extended) nominal projection, different from have and -en. However, as Hamida Demirdache (p. c.) points out, a noun-forming suffix such as -tion does not become an l-functor though it seems to lack non-configurational semantic features. Why is this so? To answer the question, we need to make the l-syntactic properties of nominalizing suffixes clear (e.g. Déchaîne (1996) for an l-syntactic analysis of several English nominalizing suffixes). Leaving this for future research, I make just one general observation here. Presumably, verbal concepts such as causation, experience, voice, aspect, and so on are much more diverse and complicated than nominal concepts. As such, verbal l-functors might be needed more than nominal onces.

With these questions and discussions as guidelines, it seems fruitful to continue investigation along the lines advanced in this thesis.
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In this appendix, I give a brief overview of Freeze (1992) and Kayne (1993), who attempt to derive a monomorphemic verb *have* from the incorporation of a preposition into *be*, and Mahajan (1994), who incorporates Kayne's decompositional analysis to derive ergativity in the Hindi perfect construction. The decompositional analyses are based on Benveniste (1966: p. 172, ch. 16), who points out the semantic similarity of possessive and existential constructions and makes an interesting suggestion that possessive HAVE is essentially 'be-to'.

In the final section, I point out that these analyses and the present analysis of *have* share a common insight. I also briefly discuss how the present analysis relates ergativity with the absence of HAVE.

1 Freeze (1992)

Freeze (1992) proposes a single underlying structure for both existential and possessive constructions, trying to capture the semantic parallelism that is observed in the following examples:

(1)  
   a. The book is on the bench.  
   b. There is a book on the bench.  
   c. Lupe has a book.

Freeze's proposal is in accordance with a strong working hypothesis that identical semantic relationships between items are represented by
identical structural relationships between those items at the underlying level (e.g. Baker's (1988) UTAH).

The single underlying structure Freeze postulates for all the sentences in (1) is given in (2), in which θ-roles are annotated just for the purposes of exposition:

(2) \( \ldots \text{BE} [\text{PP} \text{DP}_{\text{theme}} [\text{P} \text{DP}_{\text{location}}]] \)

A simple example of this structure is (3a). It may surface as (3b) or (3c), two variants of existential constructions in which BE surfaces:

(3)  
   a. \( \ldots \text{be} [\text{a/the book} [\text{P the bench}]] \)
   b. The book is on the bench.
   c. There is a book on the bench.

To derive the possessive HAVE construction,\(^1\) Freeze proposes two operations that apply to (2): (i) the movement of DP\(_{\text{location}}\) to the Spec of BE and (ii) the incorporation P into BE. These are illustrated in (4):

(4) \[ \text{DP}_{\text{location/1}} \neq \text{BE}+\text{P}_{1} [\text{PP} \text{DP}_{\text{theme}} [\text{t} \text{t}_{1}]] \]

Applying (i) and (ii) to (5a) yields (5b). \textit{Lupe} is raised to the Spec of BE and P is incorporated into BE. Freeze proposes, in the spirit of Benveniste (1966), that the BE-P complex that arises from the incorporation is morphologically realized as HAVE:

(5)  
   a. \( \ldots \text{be} [\text{a book} [\text{P Lupe}]] \)
   b. Lupe has (=BE-P) [a book [t\(_{1}\) t\(_{1}\)]

\(^{1}\) I use capitalized HAVE as a cover term for monomorphemic verbs of possession in general.
Kayne's analysis of HAVE is based on Szabolci's (1981, 1983) analysis of the Hungarian possessive DP. Kayne generalizes Szabolci's analysis to all languages.

According to Szabolci (1983), Hungarian possessive NPs have two variations, as illustrated in the following contrast:

(6) a. (a) Mari-\(\phi\) vendeg-e-\(\phi\)
the Mary-NOM guest-POSS-3SG
'Mary's guest'
b. Mari-nak a vendeg-e-\(\phi\)
Mary-DAT the guest-POSS-3SG
'Mary's guest'

As indicated in the glosses, Hungarian possessive NPs show agreement between a head nominal and a possessor.

To account for these phenomena, Szabolci (op. cit.) extends the clausal structure \([s\ COMP [s...INFL...]]\) to the nominal structure: Szabolci assumes that NP contains INFL which contains possessive features; she also assumes that NP is combined with what she calls KOMP to form NP' just as COMP and S form S':

(7) a. \(NP' \rightarrow KOMP\) NP
b. \(NP \rightarrow NP' INFL N\) where INFL=[+/-poss, (Agr)]
Given (7), the example in (6a) is assigned essentially the following structure:\footnote{Though Szabolci (1983) ignores a, I put it in (8) as D.}

\begin{equation}
\text{(8)} \quad \begin{array}{c}
\text{NP'} \\
\text{KOMP} \\
\text{NP} \\
\text{D} \quad \text{NP'} \quad \text{INFL} \quad \text{N'} \\
a \quad \text{Mari} \quad \text{Poss} \quad \text{vendeg}
\end{array}
\end{equation}

Under the framework assumed by Szabolci, the Case assignment and agreement in (6a) takes place just as in clauses: Mari is assigned nominative Case by possessive INFL and vendeg assumes the inflectional (agreement) feature just as V does in a clause.

To account for the dative Case of the possessor in (6b), Szabolci proposes to raise the possessor Mari to KOMP and assumes that the possessor is dative-marked in this position:

\begin{equation}
\text{(9)} \quad \begin{array}{c}
\text{NP'} \\
\text{KOMP} \\
\text{NP} \\
\text{NP}_i \\
\text{D} \quad \text{NP'} \quad \text{INFL} \quad \text{N'} \\
\text{Mari-nak} \quad a \quad \text{Poss} \quad \text{vendeg}
\end{array}
\end{equation}

Abstracting away from the irrelevant details, Kayne (1993) reformulates Szabolci's structure for NP' under a recent theoretical framework as follows:

\begin{equation}
\text{(10)} \quad [\text{DP Spec D [DP}_{\text{poss}}\ldots]]
\end{equation}
Dative-marking of the possessor in Hungarian is accordingly reformulated: DP* in (10) can be raised to the Spec of D and dative-marked by D.

To account for English possessive nominals such as John's three sisters, Kayne (op. cit.) elaborates (10) into (11).

(11) [DP Spec D/P [DP* Agr QP/NP]]

Stating that the English genitive marker is akin to Agr, Kayne assumes that the genitive marker heads Agr in (11). Thus, John's three sisters receives the following structure:

(12) [DP Spec D/P [Agr John [Agr's] [QP three sisters]]]

Kayne extends (11) to sentential possessive constructions such as John has a sister. He claims, following Szabolci, that a universal auxiliary BE selects (12). Further, Kayne assumes that the head of the DP selected by BE is prepositional. Thus, the general underlying structure of the sentential possessive construction is essentially (13a).

Examples of English and Hungarian are given in (13b, c):³

(13) a. ...BE [DP Spec D/P [DP* Agr QP/NP]]
   b. English: ...be [Spec D/P [John [three sisters]]]
   c. Hungarian: ...van [Spec D/P [Mari [e vendeg]]]

As stated above, Hungarian DP* Mari in (13c) is raised to the Spec of D/P and dative-marked by D/P. Kayne proposes a different property in English counterparts, that is, English D/P cannot Case-

³ Kayne assumes that Agr is empty in the sentential possessive construction.
license $DP_{poss}$. Because of this, $DP_{poss}$ must be further raised to the Spec of BE in English, as illustrated in the following:

\[(14) \quad a. \quad DP_{poss/1} BE [_{dp} t^*_i D/P [t_i [Agr QP/NP]]] \]

\[(14) \quad b. \quad \text{John, be} [t_i D/P [t_i [Agr three sisters]]] \]

Kayne assumes that the Spec of DP through which $DP_{poss}$ is raised (i.e. the position occupied by $t^*_i$ in (14a)) is an A-bar position. It follows from this stipulation that the movement of $DP_{poss}$ from there to the Spec of BE is an ‘improper movement’ from an A-bar position to an A-position.\(^4\)

Kayne suggests that this improper movement is ‘saved’ by the incorporation of D/P to BE. Kayne stipulates that the incorporation changes the Spec of DP into an A-position. The incorporation yields the following structure:

\[(15) \quad DP_{poss/1} D/P_{j+BE} [_{dp} t_i [t_i [Agr QP/NP]]] \]

Kayne essentially adopts Benveniste/Freeze's insight in assuming that D/P+BE is spelled out as HAVE:

\[(16) \quad \text{John, has} [t_i t_j [t_i [Agr three sisters]]] \]

Kayne further extends the analysis to an auxiliary HAVE, assuming that D/P may select VP, as indicated by (17a), which is

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\(^4\) Kayne suggests that the incorporation of D/P into BE is in the spirit of Baker's (1988) Government Transparency Corollary (GTC). The GTC says that, in a [X YP] configuration, the incorporation of Y° into X renders YP transparent for government (makes X govern everything Y°s trace governs). Thus, the GTC in effect allows an element in YP to move out of it since its trace is properly governed by X. Technically speaking, however, government is irrelevant to rendering an A-bar position an A-position.

Besides this problem, Kayne's analysis has many aspects that are to be clarified. For example, it is not clear what D/P is.
annotated with grammatical functions just for the purposes of exposition:

(17) a. \(...BE_{\text{DP}} \text{Spec D/P} [_{\text{VP}} \text{DP}_{\text{subj}} [V \text{DP}_{\text{obj}}]]\)

b. \(...\text{be} [\text{Spec D/P} [\text{John [broken the window]]}]\)

In English, just like DP
poss, DP
subj is raised to the Spec of D/P and further to the Spec of BE. This gives rise to (18):

(18) a. \(\text{DP}_{\text{subj}}/1 \text{BE} [\text{DP}_{\text{t, D/P}} [\text{t, [V DP}_{\text{obj}}]]]\)

b. \(\text{John, be} [\text{t, D/P} [\text{t, [broken the window]]}]\)

Incorporation of D/P to BE renders the Spec of DP an A-position. The incorporation gives rise to the surface form HAVE:

(19) a. \(\text{DP}_{\text{subj}}/1 \text{D/P}_{j+BE} [\text{DP}_{\text{t, t}} [\text{t, [V DP}_{\text{obj}}]]]\)

b. \(\text{John, has} [\text{t, t} [\text{t, [broken the window]]}]\)

As is clear from this review, one of Kayne's most important insights is the critical existence of P (represented as D/P) in the perfect as well as possessive constructions.

3 Mahajan (1994)

Mahajan (1994) draws our attention to an important generalization: typically, HAVE is absent in ergative languages. The Hindi examples that we have examined illustrate this point:
(20) a. raam ne kitab paRh-ii hai.
Ram ERG book read-PERF.F.SG be.PRES
‘Ram has read the book.’
b. us aadmii kii sirf ek hii aamkh hai.
that man GEN only one CL eye be.PRES
‘That man has only one eye.’

(McGregor (1995: 56))

Mahajan proposes to derive this generalization from the Freeze-Kayne type of decompositional analysis of HAVE and linear order variation. First, Mahajan assumes that the Case particles of the subject in (20) are postpositions (P) that correspond to the prepositions that are incorporated into BE in languages that have HAVE. Second, Mahajan proposes (21):

(21) Incorporation requires linear adjacency.

Due to (21), the Case particle (=P) cannot be incorporated into BE in an SOV language like Hindi because it is linearly separated from BE. This is schematized below:

(22) DP-P...OBJ...V...BE

Because of the failure of incorporating P into BE, the examples in (20) lack HAVE.

While Mahajan's approach is quite attractive, the adjacency condition on incorporation is too tight. It cannot be maintained in a
number of analyses such as Baker (1988), Hale and Keyser (1993), and the present analysis, in which a head skips over a specifier ubiquitously.\(^5\)

### 4 Discussion

#### 4.1 Some Cases against Incorporation

An insight of the analysis of HAVE as BE+P is shared by the analysis of complex *have* that is proposed in this thesis. Following Déchaïne (1996), I have claimed that complex *have* is associated with a complex stative/relational configuration, as in (23):

\[
(23) \quad \begin{array}{c}
\text{x} \\
\text{spec} \\
\text{y}
\end{array}
\]

In the present analysis, the inalienable interpretation of *have* is derived by the composition of two stative configurations. The complexity of (23) might roughly correspond to the complexity of HAVE in the analyses examined above.

The present analysis departs from the incorporation approach in that it does not take a position that the morphological form *have* is

\(^5\) Mahajan's 'incorporation' might be a more surfacy phenomenon than the well-known type of head movement.
derived by the incorporation of \( y \) into \( x \) in (23). As a matter of fact, the absence of the incorporation is crucial to account for the following sentences:

(24)  a. Mary has a hat on.

b. Mary has a hat on her.

*On* in (24) heads the lower projection \( y \) in (23) and it is left unincorporated.

The incorporation approach has a problem accounting for (24). If we take Freeze's analysis for instance, these sentences would be assigned the underlying structure in (25a) and the derived structure in (25b):

(25)  a. [... BE [a hat on Mary]]

b. [Mary, on\( _{\text{c}} \)-BE [a hat \( e_{\text{c}} \)]]

It is obvious, however, that *on* remains in situ at PF. It might appear to be possible to assume that the incorporation of *on* to BE applies at LF, but this is incompatible with the incorporation analysis because the BE+P complex is the source of the phonological form *have* and therefore must be obtained before Spell-out. The examples in (24), therefore, favor
The present analysis of have adopted Belvin’s (1993) insight that there are two kinds of have, and has given a principled account based on the theories of I-syntax and I-functors. The present analysis can be understood as an attempt to go one step further than Freeze and Kayne by adopting both ideas of Belvin and Benveniste/Freeze/Kayne: there are two kinds of HAVE and one of them is complex.

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6 Guéron (1995) proposes another related analysis, which is similar to the present analysis because Guéron assumes structural organization of lexical meanings. Guéron proposes the following lexical entries for BE and HAVE:

(i) BE
   V
   cat
   [Tense]
   [Agr]

(ii) HAVE
   V
   cat
   gramm
   sem
   P
   [Tense]
   [Case]
   x @ y
   location
   target

Essentially, (i) says that BE is V associated with the tense and agreement features but not with any meaning. HAVE is more complex. Its left branch is identical with the lexical entry of BE. In other words, HAVE contains BE. P in (ii) consists of the grammatical feature [Case] and the sem(antic) features. These sem features define a relation of inclusion (@) of the target in the location. An example of P is an independent preposition a in a French example Jean habite a Paris ‘John lives in Paris’, where Jean=target and Paris=location. Therefore, (ii) amounts to the claim that HAVE is [v BE+a].

7 Harley (1995: 108, fn. 39) gives Alec Marantz’s comment that “verbs like give can be spellouts of heads in the environment of other heads, and actual incorporation or merger may not take place.” HAVE in (24) is an example of such ‘spellouts without incorporation’.
4.2 Absence of HAVE and Ergative Case

As mentioned above, Mahajan (1994) proposes that the absence of HAVE correlates with ergative Case. In the present theory, how does the absence of HAVE correlate with ergative Case in Hindi? In the present analysis, this correlation is mediated by the possibility of a null 1-functor: even if a language lacks an overt *have* 1-functor, it will nevertheless have the corresponding null 1-functor; because a null 1-functor must be identified by an overt argument in its Spec, this yields the overt presence of 1-functor Cases, i.e. ergative Case marking on the subject.\(^8\)

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\(^8\) This is pointed out by Rose-Marie Déchaîne (p. c.).