<table>
<thead>
<tr>
<th>項目</th>
<th>内容</th>
</tr>
</thead>
<tbody>
<tr>
<td>タイトル</td>
<td>Unergativity and Projection of Argument Structures</td>
</tr>
<tr>
<td>資料番号</td>
<td>Nishi, Izumi</td>
</tr>
<tr>
<td>引用</td>
<td>沖縄大学紀要 = OKINAWA DAIGAKU KIYO(15): 233-248</td>
</tr>
<tr>
<td>発行日</td>
<td>1998-03-01</td>
</tr>
<tr>
<td>URL</td>
<td><a href="http://hdl.handle.net/20.500.12001/5848">http://hdl.handle.net/20.500.12001/5848</a></td>
</tr>
<tr>
<td>版権</td>
<td>沖縄大学教養部</td>
</tr>
<tr>
<td>時間</td>
<td>沖縄大学紀要 = OKINAWA DAIGAKU KIYO(15): 233-248</td>
</tr>
<tr>
<td>住所</td>
<td>沖縄大学教養部</td>
</tr>
<tr>
<td>資料番号</td>
<td>沖縄大学教養部</td>
</tr>
</tbody>
</table>
0. Introduction
The further the Minimalist program in linguistics has proceeded and progressed, the more attention has been paid to the morphological component of grammar.¹ This is a natural result of the advancement of linguistic theory along the lines of the minimalist program since the argument structures of lexical items become more transparently represented on syntactic structures.

Syntactic structures are assumed to be constructed from the bottom up, not the once-expected top down method beginning with S and applying a certain set of the phrase structure rules. They are, within a Minimalist framework, constructed in the bottom up direction so as to project the argument structures of lexical items at each application of Merge or some sort of generalized transformation.² The radical shift in the character of phrase structure is made possible by adopting the idea of the Larsonian VP-shell (Larson (1988)).³ As a result of adopting the Larsonian shell, θ-Criterion as developed and explained in Chomsky (1981) and others can be abandoned.

I elaborate this relatively new concept of phrase structure by considering "unergative" verbs in section 1. De-nominal verbs, a type of unergative verbs in English, are introduced and examined, following Hale and Keyser (1993, 1995). Section 2 introduces de-adjectival verbs as an example of ergative verbs and compares their syntactic behaviors with
those of de-nominal verbs, with a special attention paid to causative/inchoative alternation. Section 3 tries to solve the problems concerning the different syntactic behavior in causative/inchoative alternation between unergatives and ergatives, by bringing up a feature matrix proposed by Hale and Keyser (1995). Section 4 interprets and summarizes Hale and Keyser's analysis by citing some counterexamples to their theory. That multiple levels of generalization are needed to treat causative/inchoative alternations is concluded.

1. Unergativity

It is well known that intransitive verbs can be divided into two classes: unaccusatives and unergatives. Chomsky (1994, 1995) maintains that in the light of differences of behaviors it is necessary to distinguish unaccusatives from unergatives. As for the differences in syntactic behaviors and in properties, the reader should refer to Levin and Rappaport Hovav (1995) and the references cited therein. Levin and Rappaport Hovav (1995) summarize the prominent differences of the two types of intransitives as follows: first, an unergative verb has an external argument but no direct internal argument, whereas an unaccusative verb has a direct internal argument but no external argument; second, an unaccusative verb is unable to take an object with accusative case. In GB terms, lacking structural Case in the unaccusative construction forces its object to move up to the Spec position of I(nfl) to be assigned structural Case. In minimalist terms, the NP in question should be raised and its Case feature should be checked off against a corresponding feature in T(ense). The underlying structures that associate the two classes of intransitive verbs are schematically represented in (1).
In order to project the argument structures of verbs on phrase markers in a more direct way and to meet the requirements of a minimalist system of phrase structures that are formed by Merge in a step-by-step fashion from bottom to top, some version of the VP internal subject hypothesis must be adopted. If this is the case, (1a) obviously goes against the hypothesis because the subject NP is located outside its VP. Chomsky (1994, 1995) assumes, following Hale and Keyser (1993, 1995), that unergative verbs are "hidden transitives". There are some indications that unergatives are related to light-verb constructions such as make trouble and have kittens (Hale and Keyser 1993). The combination of light verb and NP forms V' as schematically shown in (2a), which is the case of "unhidden" transitive verbs.

I will return in the next section 1.1 to the problem as to why these light verb constructions should be considered to be the source of unergative constructions.
1.1. De-nominal verbs

It is important and necessary to compare the unhidden case (2) with the hidden case (3), where the complement of V is incorporated into the head. If N occupies the complement position as in (3a), the process is termed de-nominalization.\(^5\)\(^6\)

\[
(3) \quad V \\
\quad \quad V' \\
\quad \quad \quad \quad \text{sneeze} \\
\quad \quad \quad \quad \text{walk} \\
\quad \quad \quad \quad \text{life} \\
\quad \quad \text{<incorporation>}
\]

The derivation depicted by the lines with an arrow in (3) conforms to the principles that constrain the syntactic process of incorporation, in particular, to the Head Movement Constraint.\(^7\)

(4) Head Movement Constraint (HMC) (Baker 1988, p. 53)

An \(X^0\) may only move into the \(Y^0\) that properly governs it.

Hale and Keyser (1995) suggest that the motivation of incorporation above is due to Full Interpretation. Unless any incorporation raises an element to V in (2), V does not satisfy the requirements of Full Interpretation because empty V should be filled by some phonological content. Otherwise the position fails to be licensed and its derivation
crashes. The process of incorporation is somewhat more apparent in the case of de-adjectival verbs shown in 2.1 below.

1.2. Cognate object
Under a certain condition, the traces of the dislocated nouns are not phonetically vacuous but remain pronounced as cognate objects.

(5) a. ...sneeze a big sneeze
    b. ...walk a wonderful walk
    c. ...live the life of a rich man

Those cognate objects are reinterpreted and recaptured as a reminiscence of the incorporated nouns by the present analysis. Details aside, in a minimalist framework, whether or not some traces can be pronounced is decided in the phonological department by setting values of some features in trace, more correctly to say, in its Chain. The existence of cognate objects for de-nominal unergatives therefore indicates that the analysis that de-nominal unergative verbs are formed by incorporation is correct.

1.3. Applicability of causative construction
Hale and Keyser (1995) observe a parallelism between a light verb construction as in (2) and a de-nominal verb construction as in (3). They assume that the ill-formedness of (6b) is due to the same factor as that which causes the ill-formedness of (7b). Compare these sentences in (6) and (7) from Hale and Keyser (1995).

(6) a. The colt sneezed.
    b. *The alfalfa sneezed the colt.
(7)  a. John made trouble (because of the rum he drank).
    b. *The rum he drank made John trouble.

As already seen above, the argument structure shared by the verbs (6a) and (7a) shares a basic structure as in (8). Incorporation is obligatory in (6a), whereas it is not necessary in (7a)

(8)

The argument structure represented in (8) in principle prevents its verb from altering into causative counterparts as in (6b) and (7b), which problem I will elaborate in 3 below.

2. Ergativity

Ergative verbs can alter into causative as indicated in (9), which sharply contrasts with unergative ones as in (6) above, repeated here as (10). An intransitive form as in (9a), not a causative/transitive alternated form as in (9b), indicates its aspectual sense is inchoative.

(9)  a. The vase broke.
    b. I broke the vase.
(10) a. The colt sneezed.
    b. *The alfalfa sneezed the colt.

2.1. De-adjectival verb

Adopting the same line of thinking as in the case of de-nominal verbs above, de-adjectival verbs are assumed to derive their verb form by
incorporation, as shown in (11).

(11)

\[
\begin{array}{c}
\text{clear} \\
\text{narrow}
\end{array}
\]

The process also conforms to Head Movement Constraint (4) above, and
the movement of A to V is motivated by Full Interpretation in order for
a phonetically vacuous V to be licensed. Examples in (11) are those of
“zero derivation”; however, a set of adjectives require a certain affix
such as \textit{en} when they become de-adjectival verbs.

The incorporation of this type that requires an affix, i.e. verbalizer,
such as \textit{en} seems more transparent a process than that of “zero
derivation” as in (11). Consider the case (12), where \textit{en} attracts some
phonological contents such as \textit{straight} and \textit{large} in order for the gap in
V to be filled and thus to be licensed. The de-adjectival forms of
\textit{straight} and \textit{large} result in \textit{straighten} and \textit{enlarge} respectively.

(12) a. \hspace{1cm} b.

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]

\[
\begin{array}{c}
\text{V'} \\
\text{V} \\
\text{A}
\end{array}
\]
The affix is a bound morpheme in that it never fails to induce incorporation to satisfy Full Interpretation by filling the gaps (indicated above as square bracketed space) with appropriate phonological contents.

3. Projection of argument structures
As the previous section indicates, de-adjectival verbs allow the causative alternation to occur while de-nominal verbs do not. Those two types of verbs are both derived by Incorporation as shown above; however, their syntactic behaviors are antipodean with regard to the causative alternation. The question why their syntactic behaviors in causative alternation differ in this way thus far remains unanswered and in mystery. Any linguistic theory, if it is a theory at all, must provide syntactic phenomena of this sort with a principled account. It is worthwhile in this sense to see how Hale and Keyser try to provide an answer to the problem.

3.1. Inherent Properties of Lexical Categories
Hale and Keyser propose that each grammatical category contains among other features some features concerning their projection as indicated in (13).

(13) The Lexical Categories:

+subject −subject
+complement P V
−complement A N

(13) can be interpreted as follows:

(14) a. V and P take complements, N and A do not.
b. A and P are predicate in the sense that their projections require subjects (specifies); N and V are not predicates in this sense.

c. A is inherently a predicate.

In addition, when a verb is formed by incorporation, as in the cases of de-nominal verbs and de-adjectival verbs above, its basic transitivity is thereby fixed. Kiparsky (1997) calls this *Lexical integrity*. It must be noted that though the feature notation employed in (13) is supposed to be universal, the projection of each category varies cross-linguistically and is far from universal. For instance, in Navaho, V has [+subject, −complement], not A, unlike in English.⁸

Furthermore, in addition to the feature matrix in (13), there are two more principles needed. One is concerned with Predication, and the other is that subjects internal to the projection of category are guaranteed to be really within its projection. Those principles are in (15), adapted from Kiparsky (1997).

(15) a. *Principle of Full Interpretation (PFI):* Predicates must have subjects, and subjects must have predicates.

b. *Principle of Immediacy (PI):* Subjects of internal predicates must be internal. Therefore, if a X⁰ projection contains a predicate, it must contain a subject.

The reason that de-nominal verbs are unergative and do not allow causative/inchoative alternation is that N incorporated into light verb cannot have a subject. This is schematized as in (16).
By the hypothesis (13) (and its interpretation (14b)), N has a [-subject] feature and thus does not take its subject within its projection, that is, within the projection of the incorporated V. Therefore, if a subject shows up in (16), it must be an external subject outside V projection and be at the specifier position of some higher functional category, I(nfl) in the case of (16). If a lexical element incorporated is A, the whole structure will differ from (16) due to its feature [+subject].
By incorporation, A is verbalized and also requires a subject within its projection, V. If this whole structure holds at this stage, the sentence is an inchoative (intransitive) one. However there is one further derivation possible: by head-to-head movement, the incorporated A can be raised to V₁, of which position is generated within a VP-shell. In this case, the verbalized A rises over NP₁ and results in a causative/transitive construction with NP₁ its object. For the derivation to converge, another NP must merge with the constituent containing (17) at some stage of derivation and function as an external subject.

Compare this possible derivation diagrammed in (17) with the one in (16). In (16) no VP shells can be produced so that a de-nominal verb can be raised over any NP and land at a light verb position by head-to-head movement. This is because the incorporated N, by hypothesis, fails to have an internal subject due to its [-subject] feature.

The system based on the features concerning the projections each
grammatical category thus explains in principle why de-adjectival verbs allow inchoative(intransitive)/causative(transitive) alternation while de-nominal verbs do not.

4. Syntactic Approach to Lexical Semantics

Hale and Keyser's approach to lexical semantics is an enterprise to couch word meanings in the syntax. Their endeavor fits quite well the leading ideas of the minimalist project, as briefly introduced and explained in 1. Hale and Keyser's assumption is that the patterns of argument structures are quite limited and impoverished, and this assumption leads them to postulating L(exical)-syntax, where the argument structure of each lexical item can be projected in a direct and transparent way. S(entential)-syntax on the other hand deals mostly with matching of features and its consequences, as cited in 3 in the case of an external subject in de-nominal (unergative) verbs. It is a Case feature that licenses an external subject. Chomsky (1994, 1995) even suggests that the distinction between L-syntax and S-syntax is unnecessary and treats external subjects in a different way. The difference between two theories is not subtle and should thoroughly be examined on conceptual and empirical grounds, which work fails to be included in this report.

It is also relevant to compare Hale and Keyser's approach with a theory of lexical semantics based on cognitive information, not laying lexical semantics in the syntax. Hale and Keyser's theory predicts, for instance, that sentences as in (18) would be ill-formed because the verbs are alternated into causative(transitive), which alternation, according to Hale and Keyser's theory, would not be permitted.

(18) a. The photographs portray various stages in bathing,
dressing, feeding and sleeping a new baby.\textsuperscript{9, 10}

b. The time-honoured method of burping a baby is to lay it on one's shoulder and pat it on the back.

(Both sentences are taken from Kiparsky (1997))

The verbs \textit{sleep} and \textit{burp} in (18) are regarded as genuine de-nominal verbs, according to Hale and Keyser's criterion; however, they do alternate to causative (transitive) use. Kiparsky (1997) claims that causative/inchoative alternation is involved in the volition of nouns used with those verbs rather than in the projection of their argument structure. Non-volitional participants of \textit{a new baby} and \textit{a baby} in (18), because they are too young infants to have a volition, make it possible that typical de-nominal verbs like \textit{sleep} and \textit{burp} are transitivised. He concludes therefore that cognitive information plays a crucial role in deciding whether or not an unergative verb can alter into causative. By and large this is true, but it seems to me that there are certain coexisting levels of generalization, interacting with each other at some interface, that is to say, some are at the syntactic level and some at the cognitive level.

\textbf{NOTES}

*The present study is in part supported by the Special Research Grant (\textit{Okinawadai\textsuperscript{k}aku Tokubetu Kenky\=u Zyoseihi}) provided by Okinawa University during the three-year period of 1996-98. Thanks to Roslyn Williams of Poole Gakuin University, Osaka, for improvements on a draft version, but all the shortcomings to myself alone.
1. I should refer the reader to Chomsky (1995) and Fukui (1998) among others.


3. Hale and Keyser (1996) also deal with the double object construction and elaborate the idea of the Larsonian shell.

4. The nodes each dominating VP nodes in (1) are not specified since their specification is irrelevant here and depends on which theoretical assumption is adopted. Besides, I will adopt radically different structures below, along the lines of a minimalist assumption.

5. Confer the parallel derivation in the case of de-adjectival verbs below.

6. For Hale and Keyser, the class of de-nominal verbs include many verbs such as laugh and sleep that are obviously not morphologically derived from nouns. The problem might be related to the question as to at what level a relevant generalization should be obtained. I will refer to the problem in a very indirect way in 4 below.

7. For Incorporation and the Head Movement Constraint, the reader should refer to Baker (1988).

8. The reader should refer to Hale and Keyser (1996) for seeing how its actual realization differ cross-linguistically. If this is indeed the case, Hale and Keyser suggest the relationships between categories and its features are not primitives. Rather, the patterns of projections themselves are primitives. Each category of a certain language should therefore be chosen and fit to a pattern of projection, accounting for empirical facts. As primitives, the number of patterns of projections is as limited as four.

9. I have asked a few native speakers of English and found out that the grammatical judgement of (18a) varies from ill-formed to well-formed.
However, I consider the sentence to be grammatical here, adopting the judgement by Kiparsky.

10. Levin (1993) classifies verbs like *dress* and *bathe* as *Dress* verbs. Though they mostly seem to be de-nominal verbs, their behaviors are different from other de-nominal verbs. The interested reader should refer to Levin (1993).

REFERENCES


Kiparsky, Paul (1997) "Remarks on Denominal Verbs," in Alex Alsina, Joan Bresnan, and Peter Sells (eds.), Complex Predicates, Center for the Study of Language and Information, Stanford, California.