The main question that we will address is how the core patterns of accusative vs. ergative encoding of arguments (via case or agreement) are to be captured by syntactic theory.

**Primary arguments:** \(\text{EXT(ERNAL)}\) vs. \(\text{INT(ERNAL)}\):

a. **He** is working
   \[\text{Er hat gearbeitet}\]
   (he: \text{EXT})
   (er: \text{EXT})

b. **He** has arrived
   \[\text{Er ist angekommen}\]
   (he: \text{INT})
   (er: \text{INT})

c. **She** kissed **him**
   \[\text{Sie hat ihn geküsst}\]
   (she: \text{EXT}, him: \text{INT})
   (sie: \text{EXT}, ihn: \text{INT})
Arguments show up in four domains of grammar:

- Argument structure
Arguments show up in four domains of grammar:

- Argument structure
- Argument realization
Arguments in the Grammar

Arguments show up in four domains of grammar:

- Argument structure
- Argument realization
- Argument encoding
Arguments in the Grammar

Arguments show up in four domains of grammar:

- Argument structure
- Argument realization
- Argument encoding
- Argument interpretation
**Assumption:**
The lexicon entries of the verbs in (1) involve (simplified) semantic forms as in (2). Argument structures determine Θ-grids (via λ prefixation). Θ-roles are discharged by λ conversion (＝ Merge of Chomsky (1995, 2001)), from left to right.

(2) **Argument structures** (Bierwisch (1988), Wunderlich (1997), Heim & Kratzer (1998)):
   a. /work/: \( \lambda x [ x \text{ WORKS} ] \)
   b. /arrive/: \( \lambda x [ x \text{ ARRIVES} ] \)
   c. /kiss/: \( \lambda y [ \lambda x [ x \text{ KISSES} y ] ] \)

**Convention:**
The external Θ-role is underlined (Williams (1981)).
1. A standard alternative to the system in (2) relies on (a) Θ-grids as simple hierarchies of Θ-roles (see Chomsky (1981)).

\[
\begin{array}{c|c}
\times & y \\
\hline
\text{AGENT} & \text{PATIENT}
\end{array}
\]

2. There are many other theories of argument structure around; see, e.g, Reinhart (2003), Borer (2004).
Argument Realization

*From lexicon to syntax:* An argument bearing an internal Θ-role is merged within VP in the syntax, an argument bearing an external Θ-role is merged outside of VP in the syntax: it is merged as the specifier of a functional projection vP.

- The fact that such a mapping preserves the order relations among arguments comes for free in the approach adopted here; it can only be derived by additional linking rules in Chomsky' (1981) approach. In the present approach, only the fact that an external argument is realized outside of vP must be stipulated.
(4) *Projection of arguments:*

\[
\text{TP} \\
\quad \text{T'} \\
\quad \text{T} \quad \text{vP} \\
\quad \text{DP}_{\text{ext}} \quad \text{v'} \\
\quad \quad \text{v} \quad \text{VP} \\
\quad \quad \quad \text{V} \quad \text{DP}_{\text{int}}
\]
Two parameters for the encoding of arguments by markers:
(i) nominative/accusative marking vs. ergative/absolutive marking
(ii) dependent-marking vs. head-marking (Nichols (1986))
Introduction

Systems of Argument Encoding

Two parameters for the encoding of arguments by markers:
(i) nominative/accusative marking vs. ergative/absolutive marking
(ii) dependent-marking vs. head-marking (Nichols (1986))

Table 2: Accusative marking vs. ergative marking

<table>
<thead>
<tr>
<th>Accusative Pattern</th>
<th>Ergative Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP_{ext-V_i}</td>
<td>DP_{ext-V_t}</td>
</tr>
<tr>
<td>DP_{int-V_i}</td>
<td>DP_{int-V_t}</td>
</tr>
<tr>
<td>nom</td>
<td>erg</td>
</tr>
<tr>
<td>acc</td>
<td>abs</td>
</tr>
</tbody>
</table>

Terminology:
- $V_i =$ intransitive verb
- $V_t =$ transitive verb
- $DP_{ext} =$ external argument DP
- $DP_{int} =$ internal argument DP
Systems of Argument Encoding

Note on terminology:

- The notation here follows Plank (1995).
- Comrie’s (1989) system:

\[
\begin{align*}
(5) & \quad a. \quad \text{DP}_{\text{ext}-V_i}, \text{DP}_{\text{int}-V_i} = S \\
& \quad b. \quad \text{DP}_{\text{ext}-V_t} = A \\
& \quad c. \quad \text{DP}_{\text{int}-V_t} = P
\end{align*}
\]

- Dixon’s (1994) system:

\[
\begin{align*}
(6) & \quad a. \quad \text{DP}_{\text{ext}-V_i}, \text{DP}_{\text{int}-V_i} = S \\
& \quad b. \quad \text{DP}_{\text{ext}-V_t} = A \\
& \quad c. \quad \text{DP}_{\text{int}-V_t} = O
\end{align*}
\]
Argument encoding can proceed by case-marking on the DP argument (‘dependent-marking’) or by agreement-marking on the verb (‘head-marking’); see Nichols (1986), Baker (1996). This difference is often taken to be orthogonal to the choice of encoding pattern. (We will see in part [B] on agreement that this is in fact not the case.) Accordingly, notions like ‘accusative’, ‘nominative’, ‘ergative’, and ‘absolutive’ are sometimes used indiscriminately for case- and agreement-marking (see, e.g., Bickel & Nichols (2001)). **Case** is a possible cover term for both.
## Introduction

### Dependent-Marking vs. Head-Marking

<table>
<thead>
<tr>
<th>Language</th>
<th>Case Marking</th>
<th>Marking Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Icelandic</td>
<td>nominative/accusative marking</td>
<td>dependent marking</td>
</tr>
<tr>
<td>Archi</td>
<td>ergative/absolutive marking</td>
<td>dependent marking</td>
</tr>
<tr>
<td>Navajo</td>
<td>nominative/accusative marking</td>
<td>head marking</td>
</tr>
<tr>
<td>Sierra Popoluca</td>
<td>ergative/absolutive marking</td>
<td>head marking</td>
</tr>
</tbody>
</table>

*Table 3: Language types*
Icelandic 1

Indoeuropean, Iceland; speakers $< 250.000$.


*Generalization:*
Icelandic employs an accusative case-marking pattern (plus head-marking for nominative: agreement).
(8) *Intransitive verbs in Icelandic:*

a. Sól-Ø=in skín-Ø
sun-SG.NOM=DET.SG.FEM.NOM shine-3.SG
‘The sun shines.’

b. Ólaf-ur byrja-dh-i of sein-t
Olaf-SG.NOM begin-PAST-3.SG too late-3.SG.NEUT
‘Olaf began too late.’

(9) *Transitive verbs in Icelandic:*

Ólaf-ur las-Ø bók-Ø=ina
Olaf-SG.NOM read.PAST-3.SG book-SG.ACC=DET.SG.FEM.ACC

‘Olaf read the book.’
North Caucasian language, Russia (Daghestan); speakers < 1000

*Generalization:*
Archi employs an ergative case-marking pattern (plus head-marking for absolutive: agreement – I-III: noun classes; case markers bear number information).
Intransitive verbs in Archi:

a. Dija-Ø w-irxₐ.in
   father:I.SG-ABS I.SG-work

b. Buwa-Ø d-irxₐ.in
   mother:II.SG-ABS II.SG-work
   ‘Father/mother is working.’

c. Dija-Ø w-arxar-ši w-i

d. Buwa-Ø d-arxar-ši d-i
   mother:II.SG-ABS II.SG-lie-GER I.SG-Aux
   ‘Father/mother is lying.’

(Kibrik (1979, 67))
(11) *Transitive verbs in Archi:*

a. Dija-mu ̀x̣allo-Ø  b-ar-ši  b-i
   father:I.sg-erg  bread:III.sg-abs  III.sg-bake-ger  III.sg-aux

b. Buwa-mu ̀x̣allo-Ø  b-ar-ši  b-i
   mother:II.sg-erg  bread:III.sg-abs  III.sg-bake-ger  III.sg-aux
   ‘Father/mother is baking the bread.’ (Kibrik (1979, 67))
Navajo 1

Athabaskan language, USA (Arizona, New Mexico, Utah); speakers < 150,000. 

Generalization:
Navajo employs an accusative head-marking pattern.
Navajo 2

*Note:* Lexical DPs are usually optional in head-marking languages like Navajo (Jelinek (1984), Nichols (1986)); one may assume that primary arguments are nevertheless present in the syntax here, in the form of empty DP pronouns (see Baker (1996), Bruening (2001) for some of the options that arise under this general view). The Navajo agreement markers are usually called **subject** and **object** markers in the literature, and glossed here with the labels **NOM** and **ACC**; they are fusional and encode person and number in addition to **CASE**.
Navajo 3

(12) Intransitive verbs in Navajo:

a. (Y)i-sh-cha
   Ø-1.SG.NOM-cry
   ‘I am crying.’

   (Speas (1990, 209))

b. Shi (y)i-sh-ááł
   I Ø-1.SG.NOM-go
   ‘I am going.’

   (Bresnan (2001, 167))
(13) **Transitive verbs in Navajo:**

a. Ni-sh-ch’id
   2.SG.ACC-1.SG.NOM-scratch
   ‘I am scratching you.’

b. Shí-í-ní-gháád
   1.SG.ACC-PERF-2.SG.NOM-shake
   ‘You shook me.’

(Speas (1990, 209))

c. Hastói ashkii dayiiltsá
   Men boy PL-3.SG.ACC-3.SG.NOM-saw
   ‘The men saw the boy.’

(Speas (1990, 211))

d. Ashkii at’ééd yiyiiltsá
   Boy girl 3.SG.ACC-3.SG.NOM-saw
   ‘The boy saw the girl.’

(Speas (1990, 215))

e. Ashkii yiyiiltsá
   boy 3.SG.ACC-3.SG.NOM-saw
   ‘He/she/it saw the boy.’

(Speas (1990, 214))
Navajo 5

(14) *Morphological markers for argument encoding in Navajo*

<table>
<thead>
<tr>
<th>Person</th>
<th>NOM marker ('SUBJECT marker')</th>
<th>ACC marker ('OBJECT marker')</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.sg.</td>
<td>sh</td>
<td>shi</td>
</tr>
<tr>
<td>2.sg.</td>
<td>ni</td>
<td>ni</td>
</tr>
<tr>
<td>3.sg./pl.</td>
<td>Ø</td>
<td>yi (bi)</td>
</tr>
<tr>
<td>1.d/pl</td>
<td>iid</td>
<td>nihi</td>
</tr>
<tr>
<td>2.d/pl.</td>
<td>oh</td>
<td>nihi</td>
</tr>
</tbody>
</table>
Sierra Popoluca 1

Mixe-Zoque language, Mexico (Isthmus of Tehuantepec, Veracruz, Soteapan: ‘Soteapan Zoque’); speakers < 30.000.

Generalization:
Sierra Popoluca employs an ergative head-marking pattern.
Observation:
As in Navajo, lexical DPs are optional (a general property of head-marking languages). Elson (1960b) calls the agreement markers ASSOCIATE, PARTICIPANT; Marlett (1986) identifies the basic ergative marking pattern and calls the markers A, B. The agreement markers also indicate person, but not number; the latter plays a minor role in Sierra Popoluca morpho-syntax (Elson (1960b, 209/218)).
Intransitive verbs in Sierra Popoluca:

a. A-nik-pa
   1.ABS-go-UNV
   ‘I am going.’

b. A-pišiñ
   1.ABS-man
   ‘I am a man.’

c. Ta-ho:;y-pa
   1.INCL.ABS-take a walk-UNV
   ‘You and I take a walk.’

d. Ø-Wi?k-pa
   3.ABS-eat-UNV
   ‘He is eating.’

e. Ø-Nik-pa šiwan
   3.ABS-go-UNV John
   ‘John is going.’

f. Ø-Ko?c-ta:p šiwan
   3.ABS-hit-PASS-UNV John
   ‘John is being hit.’

(Marlett (1986, 364))
Transitive verbs in Sierra Popoluca:

a. A-Ø-koʔc-pa
   1.ABS-3.ERG-hit-UNV
   ‘He is hitting me.’

b. Ø-Anʔ-koʔc-pa
   3.ABS-1.ERG-hit-UNV
   ‘I am hitting him.’

c. M-anʔ-koʔc-pa
   2.ABS-1.ERG-hit-UNV
   ‘I am hitting you.’

d. Ø-I-koʔc-pa
   3.ABS-3.ERG-hit-UNV
   ‘He is hitting him.’

e. Ø-I-koʔc-yah-pa
   3.ABS-3.ERG-hit-3.PL-UNV
   ‘They are hitting him.’/‘He is hitting them.’/‘They are hitting them.’

(Elson (1960b, 208))
Table 4: Morphological markers for the encoding of arguments in Sierra Popoluca

<table>
<thead>
<tr>
<th></th>
<th>ABS</th>
<th>ERG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>a</td>
<td>an</td>
</tr>
<tr>
<td>1.incl</td>
<td>ta</td>
<td>tan</td>
</tr>
<tr>
<td>2.</td>
<td>mi</td>
<td>iñ</td>
</tr>
<tr>
<td>3.</td>
<td>Ø</td>
<td>i</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>ABS ← ERG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 → 2</td>
<td>m(i)-an</td>
</tr>
<tr>
<td>2 → 1</td>
<td>a-(i)n</td>
</tr>
</tbody>
</table>
Observation:
The ergative markers show up in two additional contexts: as possessive markers in DPs (see Benveniste (1974), Anderson (1992)), and with the distribution of a nominative marker in an accusative pattern, in certain kinds of embedded clauses (in temporal adverbial clauses without a Spanish adverb, and in some clauses that are dependent on intransitive verbs).
(17) *Ergative markers as possessive markers in Sierra Popoluca:*

a. an-tik  
   1.ERG-house  
   ‘my house’

b. M-an-ha:tuŋ  
   2.ABS-1.ERG-father  
   ‘You are my father.’  

(Elson (1960b, 208))

(18) *Ergative markers in adverbial embedded clauses in Sierra Popoluca:*

mu an-nik  
when 1.ERG-go

‘als I went’  

(Elson (1960b, 208), Marlett (1986, 364))
Observation:
In addition to the canonical pattern in table 1, language may choose to treat $DP_{ext}$ and $DP_{int}$ differently in intransitive contexts: an active system of split ergativity (‘Split-S’, ‘Fluid-S’ bei Dixon (1994)).

Table 5: Active ergative marking

<table>
<thead>
<tr>
<th>Active marking</th>
<th>$DP_{ext-V_i}$</th>
<th>$DP_{int-V_i}$</th>
<th>$DP_{ext-V_t}$</th>
<th>$DP_{int-V_t}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>erg</td>
<td></td>
<td></td>
<td>erg</td>
<td></td>
</tr>
<tr>
<td>abs</td>
<td></td>
<td></td>
<td>abs</td>
<td></td>
</tr>
</tbody>
</table>
Basque

Language isolate, Spain/France; speakers < 700.000

Generalization:
Basque employs an active ergative case-marking pattern.

(19) \textit{Intransitive and transitive verbs in Basque:}

a. Jon-Ø etorri da
   Jon-ABS come:PTCP.PRF be:3.SG.INTR
   ‘Jon came.’

b. Jon-ek saltatu du
   Jon-ERG jump:PTCP.PRF have:3.SG.TR
   ‘Jon jumped.’

c. Jon-ek ardo-a-Ø ekarri du
   Jon-ERG wine-DET-ABS bring:PTCP.PRF have:3.SG.TR
   ‘Jon brought the wine.’ \textpare{\footnotesize (Hualde & Ortiz de Urbina (2003, 364))}
Guaraní

Tupí-Guaraní language, Paraguay; speakers < 5,000,000

Generalization:
Guaraní employs an active ergative head-marking pattern.

(20)  Intransitive and transitive verbs in Guaraní:

a. Še-manu?a  
   1.SG.ABS-rembemember
   ‘I remember.’

b. A-ma.apo  
   1.SG.ERG-work
   ‘I work.’

c. Ø-Ai-pete  
   3.SG.ABS-1.SG.ERG-hit
   ‘I hit him.’

d. Še-Ø-pete  
   1.SG.ABS-3.SG.ERG-hit
   ‘He hits me.’

   (Gregores & Suárez (1967), Primus (1995, 1098))
(21) **Comrie’s (1989) system:**

a. $S = \text{DP}^{\text{ext}}_V, \text{DP}^{\text{int}}_V$

b. $A = \text{DP}^{\text{ext}}_V$

c. $P = \text{DP}^{\text{int}}_V$

“The discussion [...] is based on Comrie (1978b). Very similar ideas, though with certain differences in terminology, emphasis, and concept, are given independently in Dixon (1979).” (Comrie (1989, 123))
(21) **Comrie’s (1989) system:**

a. $S = \text{DP}_{\text{ext}} - V_i, \text{DP}_{\text{int}} - V_i$

b. $A = \text{DP}_{\text{ext}} - V_t$

c. $P = \text{DP}_{\text{int}} - V_t$

“The discussion [...] is based on Comrie (1978b). Very similar ideas, though with certain differences in terminology, emphasis, and concept, are given independently in Dixon (1979).” (Comrie (1989, 123))

(22) **Dixon’s (1994) system:**

a. $S = \text{DP}_{\text{ext}} - V_i, \text{DP}_{\text{int}} - V_i$

b. $A = \text{DP}_{\text{ext}} - V_t$

c. $O = \text{DP}_{\text{int}} - V_t$

“A survey of the literature shows that the letters S, A and O (which were first used in Dixon 1968, then Dixon 1972) are the most common symbols used for the three primitives. However, some scholars use P (for patient) in place of O (e.g. Comrie 1978).” (Dixon (1994, 6))
Claim (Dixon (1994, 6)):
“All languages work in terms of three primitive relations:” S, A, O.

However:

(23) “Since each grammar must include semantically contrastive marking for A and O, this can usefully be applied also to S – those S which are semantically similar to A [...] will be $S_a$, marked like A, and those S which are semantically similar to O [...] will be $S_o$, marked like O.” (Dixon (1994, 70))
Claim (Dixon (1994, 6)):
“All languages work in terms of three primitive relations:” S, A, O.

However:

(23) “Since each grammar must include semantically contrastive marking for A and O, this can usefully be applied also to S – those S which are semantically similar to A [...] will be $S_a$, marked like A, and those S which are semantically similar to O [...] will be $S_o$, marked like O.” (Dixon (1994, 70))

Conclusion:
Neither Comrie’s nor Dixon’s system is particularly well designed vis-a-vis the goal of describing active marking patterns. What can be done? There are several possibilities:

- $S_a$, $S_o$ (or $a$, $o$) are further primitives.
- $\text{DP}_{\text{ext}}$, $\text{DP}_{\text{int}}$, $V_t$, $V_i$ are the true primitives.
Active Accusative Systems: Eastern Pomo

Extinct, Hokan (California).

Ref.: Bittner & Hale (1996b).

(24) *Intransitive and transitive verbs in Eastern Pomo:*

a. Máip máip-al sáaka
   he.NOM him-ACC killed
   ‘He killed him.’

b. Máip-al xáa baakúma
   him-ACC in the water fell
   ‘He fell in the water (accidentally).’

c. Máip káluhuya
   he.NOM went home
   ‘He went home.’

*Table 6: Active accusative marking*

<table>
<thead>
<tr>
<th>Active marking</th>
<th>DP_{ext-V_i}</th>
<th>DP_{int-V_i}</th>
</tr>
</thead>
<tbody>
<tr>
<td>nom</td>
<td>DP_{ext-V_t}</td>
<td>DP_{int-V_t}</td>
</tr>
</tbody>
</table>
Another logical possibility (that suggests itself given active ergative marking patterns) is not attested.
Accusative language with accusative marking of $\text{DP}_{\text{ext}}-\text{V}_i$.

**Table 7: Anti-active (ergative or accusative) marking**

<table>
<thead>
<tr>
<th>Anti-active pattern</th>
<th>$\text{DP}_{\text{ext}}-\text{V}_i$</th>
<th>$\text{DP}_{\text{int}}-\text{V}_i$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{DP}_{\text{ext}}-\text{V}_t$</td>
<td>nom</td>
<td>$\text{DP}_{\text{int}}-\text{V}_t$</td>
</tr>
</tbody>
</table>
German

(25)  *Anti-active language:

a. Ihn hat gearbeitet (ihn: EXT)  
   him.ACC has worked  
   ‘He has worked.’

b. Er ist hingefallen (er: INT)  
   he.NOM is fallen  
   ‘He fell.’

c. Sie hat ihn geküssst (sie: EXT, ihn: INT)  
   she.NOM has him.ACC kissed  
   ‘She kissed him.’

Observation and functional explanation (Bechert (1979)):
Such languages do not seem to exist. They ensure a differentiation of $\text{DP}_{\text{ext}}$ and $\text{DP}_{\text{int}}$ in $V_t$ contexts (the minimum requirement for argument encoding systems); however, they are extremely dysfunctional because there is no implicational relation between case and argument type (external/internal) in this marking system.
More Splits: Person-Based Split Ergativity

Person-based split ergativity in Dyirbal:
In Dyirbal, DP_{ext} of V_t is marked ergative (-ŋgu) if it is a 3rd person pronoun or an item to the right of it on the person/animacy scale in (26). DP_{int} of V_t is marked accusative (-na) if it is a 1st or 2nd person pronoun. All other types of argument DP remain without an overt marker (see Dixon (1972, 1994)).

(26)  \textit{Person/animacy scale} (Silverstein (1976), Aissen (1999)): 
1st person pronoun $>$ 2nd person pronoun $>$ 3rd person pronoun $>$ 
proper name $>$ common noun, human $>$ common noun, animate $>$ 
common noun, inanimate
Tense-/Aspect-based split ergativity:

- In Burushaski past tense contexts, ergative case shows up on $\text{DP}_{\text{ext}}$ of $V_t$; other arguments are not overtly marked. In other contexts, there is no case marker whatsoever; but there is a fairly fixed constituent order and agreement marking to some extent (see Dixon (1994) and references cited there).
Tense-/Aspect-based split ergativity:

- In Burushaski past tense contexts, ergative case shows up on $\text{DP}_{\text{ext}}$ of $V_t$; other arguments are not overtly marked. In other contexts, there is no case marker whatsoever; but there is a fairly fixed constituent order and agreement marking to some extent (see Dixon (1994) and references cited there).

- In Hindi perfective aspect contexts, $\text{DP}_{\text{ext}}$ of $V_t$ is marked with ergative case; other DPs are not overtly marked. In other contexts, $\text{DP}_{\text{int}}$ of $V_t$ is marked with accusative case; other DPs are not marked (see, e.g., Mahajan (1990)).
Note:
So far, the notion of “subject” has played no role. However, there are operations that refer to such a concept, e.g.: reflexivization, raising, control, imperative formation, relativization, topic chaining (‘pivot-chaining’; Dixon (1972, 1994)).

Side remark:
Dixon (1994) uses the notions subject and pivot, for S/A- and S/O-groupings in “underlying structure” (subject) and “derived structures” (pivot), respectively. The latter case includes clause combining (e.g., via conjunction).
Accusative pattern:
In accusative languages, it is typically the nominative argument that has subject properties (e.g., in German). Normally, the nominative argument is the highest (or single) argument. However, if the highest argument is a non-nominative argument, as it may be, e.g., in Icelandic oblique (quirky) subject constructions, then this latter argument can also have subject properties.

(27) Raising of dative subjects in Icelandic:

Barn-i=nu virdh -i-st hafa
child-SG.DAT=DET.SG.NEUT.DAT seem-3.SG-PASS to have recover-SUP
batn-adh veik-i=n
illness-SG.NOM=DET.SG.FEM.NOM

‘The child seems to have recovered from the illness.’ (Andrews (1982, (53-b)))
**Ergative pattern:**
In ergative systems, there are two possibilities: Either the highest argument DP, or the argument DP that is marked with absolutive case, can exhibit subject properties:

1. **morphological ergativity:** except for CASE marking, the syntax treats $\text{DP}_{\text{ext/int}}^{-V_i}$ and $\text{DP}_{\text{ext}}^{-V_t}$ on a par.

2. **syntactic ergativity:** as with CASE marking, the syntax treats $\text{DP}_{\text{ext/int}}^{-V_i}$ and $\text{DP}_{\text{int}}^{-V_t}$ on a par.
**Ergative pattern:**

In ergative systems, there are two possibilities: Either the highest argument DP, or the argument DP that is marked with absolutive case, can exhibit subject properties:

1. **morphological ergativity:** except for CASE marking, the syntax treats $\text{DP}_{\text{ext/int}-\text{V}_i}$ and $\text{DP}_{\text{ext}-\text{V}_t}$ on a par.

2. **syntactic ergativity:** as with CASE marking, the syntax treats $\text{DP}_{\text{ext/int}-\text{V}_i}$ and $\text{DP}_{\text{int}-\text{V}_t}$ on a par.

- Archi, Basque, Warlpiri: morphological ergativity
- Dyirbal (at least as a tendency): syntactic ergativity
- Chukchi: optionality
- Inuit: Some operations select the highest argument as the subject, and other operations select the absolutive argument.

(28) a. Father saw mother
b. Father/mother returned
c. Father₁ saw mother₂ and e₁/*e₂ returned
d. Father₁ returned and mother₂ saw *e₁/*e₂

Observation:
Argument realization and argument encoding go hand in hand.
(29) a. ɲuma banaga-ɲu
father-ABS return-NONFUT
‘Father returned.’
b. yabu banaga-ɲu
mother-ABS returned-NONFUT
‘Mother returned.’
c. ɲuma yabu-ŋgu bura-n
father-ABS mother-ERG see-NONFUT
‘Mother saw father.’
(29)  a. ŋuma banaga-n'y u
father-ABS return-NONFUT
‘Father returned.’

b. yabu banaga-n'y u
mother-ABS returned-NONFUT
‘Mother returned.’

c. ŋuma yabu-ŋgu bura-n
father-ABS mother-ERG see-NONFUT
‘Mother saw father.’

d. ŋuma banaga-n'y u yabu-ŋgu bura-n
father-ABS return-NONFUT mother-ERG see-NONFUT
‘Father₁ returned and mother₂ saw him₁.’

e. ŋuma yabu-ŋgu bura-n banaga-n'y u
father-ABS mother-ERG see-NONFUT return-NONFUT
‘Mother saw father and he returned.’

Observation:
Argument realization and argument encoding go hand in hand: syntactic ergativity.
Topic Chaining: Chukchi

(30) ətləɣ-e talayvənen ekək ənk?am ekvetyʔi
father-ERG he-hit-him son-ABS and he-went.away
“The father hit the son, and the father/the son went away.”

Observation:
Argument realization and argument encoding may diverge: optional syntactic ergativity.
Strategies for Analysis

Theoretical options:

1. **Argument realization**: Accusative and ergative encoding patterns involve different types of argument realization (i.e., a different projection of argument structures into syntax). **Argument encoding** in the syntax can then take place in a uniform way.
Strategies for Analysis

Theoretical options:

1. **Argument realization:**
   Accusative and ergative encoding patterns involve different types of argument realization (i.e., a different projection of argument structures into syntax). **Argument encoding** in the syntax can then take place in a uniform way.

2. **Argument encoding:**
   Accusative and ergative encoding patterns involve identical types of **argument realization**. However, the systems of morphological encoding of arguments in the syntax are different.
Theoretical options:

1. **Argument realization:**
   Accusative and ergative encoding patterns involve different types of argument realization (i.e., a different projection of argument structures into syntax). Argument encoding in the syntax can then take place in a uniform way.

2. **Argument encoding:**
   Accusative and ergative encoding patterns involve identical types of argument realization. However, the systems of morphological encoding of arguments in the syntax are different.

Predictions:

- **Argument realization → syntactic ergativity/accusativity**
- **Argument encoding → morphological ergativity/accusativity**
Argument Realization Approaches

This is the classical type of analysis in theoretical syntax. The hypothesis that a difference in argument realization is responsible for the ergative/accusative parameter comes in two versions a strong and a weak one.
Argument Realization Approaches

This is the classical type of analysis in theoretical syntax. The hypothesis that a difference in argument realiziation is responsible for the ergative/accusative parameter comes in two versions a strong and a weak one.

- Ergative and accusative languages project the primary arguments of the verb in a different order. \(\rightarrow\) Marantz (1984)
Argument Realization Approaches

This is the classical type of analysis in theoretical syntax. The hypothesis that a difference in argument realization is responsible for the ergative/accusative parameter comes in two versions a **strong** and a **weak** one.

- Ergative and accusative languages project the primary arguments of the verb in a different order. → Marantz (1984)
- Ergative and accusative languages project the primary arguments of the verb differently, but in the same order. → Nash (1996)
Argument Realization Approaches

This is the classical type of analysis in theoretical syntax. The hypothesis that a difference in argument realization is responsible for the ergative/accusative parameter comes in two versions a strong and a weak one.

- Ergative and accusative languages project the primary arguments of the verb in a different order. → Marantz (1984)
- Ergative and accusative languages project the primary arguments of the verb differently, but in the same order. → Nash (1996)
Marantz’ Analysis 1

A language may choose between the generalizations in (31) and (32).
Marantz’ Analysis 1

A language may choose between the generalizations in (31) and (32).

(31) Accusative pattern:
   a. Agent Θ-role ← assigned by predicate
   b. Theme/Patient Θ-role ← assigned by verb
A language may choose between the generalizations in (31) and (32).

(31) Accusative pattern:
   a. Agent Θ-role ← assigned by predicate
   b. Theme/Patient Θ-role ← assigned by verb

(32) Ergative pattern:
   a. Agent Θ-role ← assigned by verb
   b. Theme/Patient Θ-role ← assigned by predicate
A language may choose between the generalizations in (31) and (32).

(31) Accusative pattern:
   a. Agent Θ-role ← assigned by predicate
   b. Theme/Patient Θ-role ← assigned by verb

(32) Ergative pattern:
   a. Agent Θ-role ← assigned by verb
   b. Theme/Patient Θ-role ← assigned by predicate

Terminology:
- “assigned by verb” = merged in VP (= internal argument)
- “assigned by predicate” = merged outside of VP (in SpecvP) (=external argument)
Marantz’ Analysis 2

Consequences:

1. There are enormous syntactic differences with respect to the relation between a verb and its arguments between the two language types.
Consequences:

1. There are **enormous syntactic differences** with respect to the relation between a verb and its arguments between the two language types.

2. Morphological ergativity always implies **syntactic ergativity**. ("On the definition just given, many of the languages called ergative in the literature turn out to be nominative-accusative. These languages distribute case marking in such a way that, for the most part, the correspondence between semantic roles and case marking matches that for a true ergative language"); Marantz (1984, 196-197))
Consequences:

1. There are enormous syntactic differences with respect to the relation between a verb and its arguments between the two language types.

2. Morphological ergativity always implies syntactic ergativity. (“On the definition just given, many of the languages called ergative in the literature turn out to be nominative-accusative. These languages distribute case marking in such a way that, for the most part, the correspondence between semantic roles and case marking matches that for a true ergative language”; Marantz (1984, 196-197))

3. Strictly speaking, an active encoding pattern is predicted for ergative systems.
The cases of primary arguments are determined by two different syntactic heads $K_1$, $K_2$ (e.g.: $K_1 = \text{Agr}_s$, $K_2 = \text{Agr}_o$). The two language types are identical with respect to $V_t$ contexts; in $V_i$ contexts, there are differences. Only $K_2$ is “activated” in ergative languages, and only $K_1$ is “activated” in accusative languages.

1. ERG, NOM $\rightarrow$ $K_1$
2. ABS, ACC $\rightarrow$ $K_2$

(Chomsky (1993), Bobaljik (1993), Laka (1993), Rezac (2003))
(33) **Phrase Structure:**

```
CP
  Spec
    C
      Spec
        AgrSP
          Spec
            AgrS
              TP
                Spec
                  T
                    Spec
                      AgrO
                        DPext
                          V
                            DPint
```

Sketch of an Analysis in Chomsky (1993, 6-10)
Assumptions:

1. Agreement and (structural) case are manifestations of specifier/head relations: $\langle \text{DP}, \text{Agr} \rangle$

2. Two occurrences of Agr nodes are required for two DPs in VP (without lexical case).

3. Case properties in Agr domains are determined by both Agr and V,T: There is head movement of V to Agr$_O$, and of T to Agr$_S$.

4. DP$_{int}$ moves to SpecAgr$_O$ and checks case there; DP$_{ext}$ moves to SpecAgr$_S$ and checks case there.
(34) Ergative/Absolutive Parameter:

a. If only one DP in VP needs structural case, only one of the two Agr nodes is active (the other one is inert or missing): Agr$_S$ or Agr$_O$.

b. Accusative pattern: Active Agr$_S$

   DP shares properties with the subject of a transitive context.

c. Ergative pattern: Active Agr$_O$

   DP shares properties with the object of a transitive context.
Chomsky's analysis as an argument encoding approach:

Chomsky (1993, 9-10):

“These are the only two possibilities, mixtures apart. The distinction between the two language types reduces to a trivial question of morphology, as we expect. Note that from this point of view, the terms nominative, absolutive, and so on, have no substantive meaning apart from what is determined by the choice of “active” vs. “inert” Agr; there is no real question as to how these terms correspond across language types.”
Problem (Comrie (1989), Dixon (1994)):
- Accusative case and ergative case are typically morphologically more marked.
- Nominative case and absolutive case are often morphologically less marked (or not marked at all).
Sketch of an Analysis in Chomsky (1993, 6-10) 5

**Problem** (Comrie (1989), Dixon (1994)):

- Accusative case and ergative case are typically **morphologically more marked**.
- Nominative case and absolutive case are often **morphologically less marked (or not marked at all)**.

**Chomsky’s explanation:**

“The “active” element (Agr\_S in nominative-accusative languages and Agr\_O in ergative-absolutive languages) typically assigns a less-marked Case to its Spec, which is also higher on the extractibility hierarchy, among other properties. It is natural to expect less-marked Case to be compensated (again, as a tendency) by more-marked agreement (richer overt agreement with nominative and absolutive than with accusative and ergative). The **c-command condition on anaphora** leads us to expect nominative and ergative binding in transitive constructions.”
Problem (Comrie (1989), Dixon (1994)):

- Accusative case and ergative case are typically **morphologically more marked**.
- Nominative case and absolutive case are often **morphologically less marked** (or not marked at all).

Chomsky’s explanation:
“The “active” element (Agr$_S$ in nominative-accusative languages and Agr$_O$ in ergative-absolutive languages) typically assigns a less-marked Case to its Spec, which is also higher on the extractibility hierarchy, among other properties. It is natural to expect less-marked Case to be compensated (again, as a tendency) by more-marked agreement (richer overt agreement with nominative and absolutive than with accusative and ergative). The c-command condition on anaphora leads us to expect nominative and ergative binding in transitive constructions.”

Footnote 13: “For development of an approach along such lines, see Bobaljik (1992a,b).”
The cases of primary arguments are determined by two different syntactic heads $K_1, K_2$ ($K_1 = I$, $K_2 = V$). In ergative languages, $K_1$ determines ergative case, and $K_2$ does not determine a structural case. In accusative languages, $K_1$ does not determine a structural case, and $K_2$ determines accusative case. The remaining (or single) argument receives $C(omp)$-related default case (‘K-Filter’).

1. ERG $\rightarrow K_1$
2. ACC $\rightarrow K_2$
3. NOM, ABS $\rightarrow$ Default

(Bittner & Hale (1996a))
The cases of primary arguments are determined by two different syntactic heads $K_1, K_2$ (e.g.: $K_1 = \text{Agr}_s$, $K_2 = \text{Agr}_o$). In $V_i$ contexts, the two language types are identical (only $K_1$ can determine case). In $V_t$ contexts, $K_2$ is “strong” in ergative languages; and $K_1$ is “strong” in accusative languages.
The cases of primary arguments are determined by two different syntactic heads $K_1, K_2$ (e.g.: $K_1 = \text{Agr}_s, K_2 = \text{Agr}_o$). In $V_i$ contexts, the two language types are identical (only $K_1$ can determine case). In $V_t$ contexts, $K_2$ is "strong" in ergative languages; and $K_1$ is "strong" in accusative languages. Assumption: Strong $K$ attracts the highest DP argument.
The cases of primary arguments are determined by two different syntactic heads $K_1, K_2$ (e.g.: $K_1 = \text{Agr}_s$, $K_2 = \text{Agr}_o$). In $V_i$ contexts, the two language types are identical (only $K_1$ can determine case). In $V_t$ contexts, $K_2$ is “strong” in ergative languages; and $K_1$ is “strong” in accusative languages.

Assumption: Strong $K$ attracts the highest DP argument.
Consequence: Embedded vs. nesting paths in ergative vs. accusative languages.

1. $\text{ERG, ACC} \rightarrow K_2$
2. $\text{NOM, ABS} \rightarrow K_1$

(Murasugi (1992), Jelinek (1993))
Optimality Theoretic Analyses:

- \( \text{ERG}_{\text{trans}} \gg *\text{ERG} \) in ergative languages
- \( *\text{ERG} \gg \text{ERG}_{\text{trans}} \) in accusative languages

(35) \( \text{ERG}_{\text{trans}} \):
The highest NP argument of a transitive verb bears ergative case.

(36) \( *\text{ERG} \):
NP arguments must not bear ergative case.

Note:
(i) \( \text{ERG}_{\text{trans}} \) may be viewed as either a markedness constraint or a faithfulness constraint (see Heck et al. (2002)).
(ii) \( *\text{ERG} \) is a markedness constraint.

Ref.: (Kiparsky (1999), Stiebels (2000), Woolford (2001), Lee (2003))
Criteria for Explanatory Adequacy

Possible criteria for theory formation:

1. There are no construction-specific rules for cases like ERG, ACC. (E.g., one does not want to explicitly state that some functional head assigns some specific case to some designated argument(s).)
Criteria for Explanatory Adequacy

Possible criteria for theory formation:

1. There are no construction-specific rules for cases like ERG, ACC. (E.g., one does not want to explicitly state that some functional head assigns some specific case to some designated argument(s).)

2. The projection of arguments from lexicon to syntax is uniform across languages.
Possible criteria for theory formation:

1. There are no construction-specific rules for cases like ERG, ACC. (E.g., one does not want to explicitly state that some functional head assigns some specific case to some designated argument(s).)

2. The projection of arguments from lexicon to syntax is uniform across languages.

3. There are no semantically irrelevant projections like Agr$_s$P, Agr$_o$P (Chomsky (1995, 2001)).
Criteria for Explanatory Adequacy

Possible criteria for theory formation:

1. There are no construction-specific rules for cases like \textit{ERG}, \textit{ACC}. (E.g., one does not want to explicitly state that some functional head assigns some specific case to some designated argument(s).)

2. The projection of arguments from lexicon to syntax is uniform across languages.

3. There are no semantically irrelevant projections like \textit{Agr}_sP, \textit{Agr}_oP (Chomsky (1995, 2001)).

4. Case assignment is independent of movement (Chomsky (2000, 2001)).
Criteria for Explanatory Adequacy

Possible criteria for theory formation:

1. There are no construction-specific rules for cases like ERG, ACC. (E.g., one does not want to explicitly state that some functional head assigns some specific case to some designated argument(s).)

2. The projection of arguments from lexicon to syntax is uniform across languages.

3. There are no semantically irrelevant projections like Agr₅P, AgrₒP (Chomsky (1995, 2001)).

4. Case assignment is independent of movement (Chomsky (2000, 2001)).

5. 1. ERG, ACC → internal structural case ($K₂$)
    2. NOM, ABS → external structural case ($K₁$)

6. Internal case is generally morphologically more marked; external case often remains without overt marking (Comrie (1989), Dixon (1994)).


