

Syntax II. [A] Case 1

Gereon Müller

Institut für Linguistik
Universität Leipzig

WiSe 2014/2015

www.uni-leipzig.de/~muellerg

Topic

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: EXT(ERNAL) vs. INT(ERNAL):

- | | | |
|----|-----------------------------------|----------------------|
| a. | <u>He</u> is working | (he: EXT) |
| | <u>Er</u> hat gearbeitet | (er: EXT) |
| b. | <u>He</u> has arrived | (he: INT) |
| | <u>Er</u> ist angekommen | (er: INT) |
| c. | <u>She</u> kissed <u>him</u> | (she: EXT, him: INT) |
| | <u>Sie</u> hat <u>ihn</u> geküsst | (sie: EXT, ihn: INT) |

Arguments in the Grammar

Arguments show up in four domains of grammar:

- Argument structure
- Argument realization
- **Argument encoding**
- Argument interpretation

Argument Structure

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/: $\lambda \underline{x}$ [x WORKS]
 - b. /arrive/: λx [x ARRIVES]
 - c. /kiss/: λy [$\lambda \underline{x}$ [x KISSES y]]
- $\underbrace{\hspace{10em}}_{\Theta\text{-grid}}$

Convention:

The external Θ -role is underlined (Williams (1981)).

Argument Structure

- 1 A standard alternative to the system in (2) relies on (a) Θ -grids as simple hierarchies of Θ -roles (see Chomsky (1981)).

(3) /kiss/:

x	y
AGENT	PATIENT

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

Argument Realization

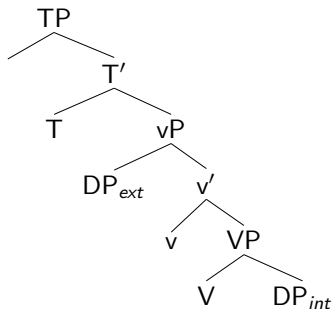
From lexicon to syntax:

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.

Argument Realization

(4) *Projection of arguments:*



Systems of Argument Encoding

Two parameters for the encoding of arguments by markers:

- (i) nominative/accusative marking vs. ergative/absolutive marking
(Comrie (1989), Dixon (1994), Plank (1995))
- (ii) dependent-marking vs. head-marking (Nichols (1986))

Table 1: Accusative marking vs. ergative marking

accusative pattern	ergative pattern												
<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px;">$DP_{ext}-V_i$</td> <td style="border: 1px solid black; padding: 5px;">$DP_{int}-V_i$</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">$DP_{ext}-V_t$</td> <td style="border: 1px solid black; padding: 5px;">$DP_{int}-V_t$</td> </tr> <tr> <td style="text-align: center; padding: 5px;">nom</td> <td style="text-align: center; padding: 5px;">acc</td> </tr> </table>	$DP_{ext}-V_i$	$DP_{int}-V_i$	$DP_{ext}-V_t$	$DP_{int}-V_t$	nom	acc	<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px;">$DP_{ext}-V_i$</td> <td style="border: 1px solid black; padding: 5px;">$DP_{int}-V_i$</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">$DP_{ext}-V_t$</td> <td style="border: 1px solid black; padding: 5px;">$DP_{int}-V_t$</td> </tr> <tr> <td style="text-align: center; padding: 5px;">erg</td> <td style="text-align: center; padding: 5px;">abs</td> </tr> </table>	$DP_{ext}-V_i$	$DP_{int}-V_i$	$DP_{ext}-V_t$	$DP_{int}-V_t$	erg	abs
$DP_{ext}-V_i$	$DP_{int}-V_i$												
$DP_{ext}-V_t$	$DP_{int}-V_t$												
nom	acc												
$DP_{ext}-V_i$	$DP_{int}-V_i$												
$DP_{ext}-V_t$	$DP_{int}-V_t$												
erg	abs												

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:

- (5)
- $DP_{ext-V_i}, DP_{int-V_i} = S$
 - $DP_{ext-V_t} = A$
 - $DP_{int-V_t} = P$

- Dixon's (1994) system:

- (6)
- $DP_{ext-V_i}, DP_{int-V_i} = S$
 - $DP_{ext-V_t} = A$
 - $DP_{int-V_t} = O$

Dependent-Marking vs. Head-Marking

(7) *Dependent-marking vs. head-marking:*

DP-marker V

|

DP marker-V

- 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.

Dependent-Marking vs. Head-Marking

Table 2: Language types

Icelandic	nominative/accusative marking	dependent marking
Archi	ergative/absolutive marking	dependent marking
Navajo	nominative/accusative marking	head marking
Sierra Popoluca	ergative/absolutive marking	head marking

Icelandic 1

Indoeuropean, Iceland; speakers < 250.000.

Ref.: Andrews (1982), Kress (1982), Sigurðsson (1989, 2002a), Thráinsson (1994), Taraldsen (1995)

Generalization:

Icelandic employs an accusative case-marking pattern (plus head-marking for nominative: agreement).

Icelandic 2

(8) *Intransitive verbs in Icelandic:*

- a. Sól-Ø=in skín-Ø
 sun-SG.NOM=DET.SG.FEM.NOM shine-3.SG
 'The sun shines.' (Kress (1982, 263))
- 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.' (Sigurðsson (2002b, 698))

Archi 1

North Caucasian language, Russia (Daghestan); speakers < 1000

Ref.: Kibrik (1979, 1991, 2003), Mel'čuk (1999), Plank (1999)

Generalization:

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

Archi 2

(10) *Intransitive verbs in Archi:*

- a. Dija-Ø w-ir \bar{x} _oin
 father:I.SG-ABS I.SG-work
- b. Buwa-Ø d-ir \bar{x} _oin
 mother:II.SG-ABS II.SG-work
 'Father/mother is working.'
- c. Dija-Ø w-arxar-ši w-i
 father:I.SG-ABS I.SG-lie-GER I.SG-Aux
- 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))

Archi 3

(11) *Transitive verbs in Archi:*

- a. Di_{ja}-mu x̄_oalli-∅ b-ar-š_i b-i
 father:I.SG-ERG bread:III.SG-ABS III.SG-bake-GER III.SG-Aux
- b. Bu_{wa}-mu x̄_oalli-∅ b-ar-š_i 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.
Ref.: Young & Morgan (1987), Speas (1990, 1991), Hale & Platero (2000),
Bresnan (2001), McDonough (2000), Hale (2001)

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))

Navajo 4

(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. Hastóí 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*

Person	NOM marker (‘SUBJECT marker’)	ACC marker (‘OBJECT marker’)
1.sg.	sh	shi
2.sg.	ni	ni
3.sg./pl.	∅	yi (bi)
1.d/pl	iid	nih
2.d/pl.	oh	nih

Sierra Popoluca 1

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

Ref.: Elson (1960a,b), Elson & Pickett (1964), Lind (1964), Marlett (1986), Wichmann (1993)

Generalization:

Sierra Popoluca employs an ergative head-marking pattern.

Sierra Popoluca 2

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)).

Sierra Popoluca 3

(15) *Intransitive verbs in Sierra Popoluca:*

- a. A-nik-pa
1.ABS-go-UNV
'I am going.'
- b. A-pi:šiñ
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))

(Elson (1960b, 208))

Sierra Popoluca 4

(16) *Transitive verbs in Sierra Popoluca:*

- a. A-Ø-ko[?]c-pa
1.ABS-3.ERG-hit-UNV
'He is hitting me.'
- b. Ø-Aŋ-ko[?]c-pa
3.ABS-1.ERG-hit-UNV
'I am hitting him.'
- c. M-aŋ-ko[?]c-pa
2.ABS-1.ERG-hit-UNV
'I am hitting you.'
- d. Ø-I-ko[?]c-pa
3.ABS-3.ERG-hit-UNV
'He is hitting him.'
- e. Ø-I-ko[?]c-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))
- (Elson (1960b, 209))

Sierra Popoluca 5

Table 3: Morphological markers for the encoding of arguments in Sierra Popoluca

	ABS	ERG
1.	a	an
1.incl	ta	tan
2.	mi	iñ
3.	∅	i

	ABS ← ERG
1 → 2	m(i)-an
2 → 1	a-(i)n

Sierra Popoluca 6

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).

Sierra Popoluca 7

(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))

Active Systems

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 4: Active ergative marking

Active marking	
$DP_{ext}-V_i$	$DP_{int}-V_i$
$DP_{ext}-V_t$	$DP_{int}-V_t$
erg	abs

Basque

Language isolate, Spain/France; speakers < 700.000

Ref.: Levin (1983), Ortiz de Urbina (1989), Laka (1993), Rezac (2003), Hualde & Ortiz de Urbina (2003)

Generalization:

Basque employs an active ergative case-marking pattern.

(19) *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.' (Hualde & Ortiz de Urbina (2003, 364))

Guaraní

Tupí-Guaraní language, Paraguay; speakers < 5.000.000

Ref.: Gregores & Suárez (1967), Dixon (1994), Primus (1995)

Generalization:

Guaraní employs an active ergative head-marking pattern.

(20) *Intransitive and transitive verbs in Guaraní:*

- a. Še-manu[?]a
1.SG.ABS-remember
'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))

Primitive Argument Types (Dixon and Comrie) 1

(21) **Comrie's (1989) system:**

- a. $S = DP_{ext-V_i}, DP_{int-V_i}$
- b. $A = DP_{ext-V_t}$
- c. $P = DP_{int-V_t}$

“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. $S = DP_{ext-V_i}, DP_{int-V_i}$
- b. $A = DP_{ext-V_t}$
- c. $O = DP_{int-V_t}$

“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))

Primitive Argument Types (Dixon and Comrie) 2

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.
- DP_{ext}, DP_{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. Míip míip-al sáaka
 he.NOM him-ACC killed
 'He killed him.'
- b. Míip-al xáa baakúma
 him-ACC in the water fell
 'He fell in the water (accidentally).'
- c. Míip káluhuya
 he.NOM went home
 'He went home.'

Table 5: Active accusative marking

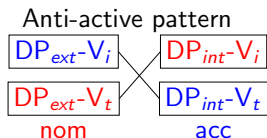
Active marking	
DP_{ext-V_i} DP_{ext-V_t}	DP_{int-V_i} DP_{int-V_t}
nom	acc

Anti-active Systems

Another logical possibility (that suggests itself given active ergative marking patterns) is not attested.

Accusative language with accusative marking of DP_{ext-V_i} .

Table 6: Anti-active (ergative or accusative) marking



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 geküsst (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 DP_{ext} and DP_{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) *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

More Splits: Tense-/Aspect-Based Split Ergativity

Tense-/Aspect-based split ergativity:

- In Burushaski past tense contexts, ergative case shows up on DP_{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, DP_{ext} of V_t is marked with ergative case; other DPs are not overtly marked. In other contexts, DP_{int} of V_t is marked with accusative case; other DPs are not marked (see, e.g., Mahajan (1990)).

Syntactic Ergativity 1

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).

Syntactic Ergativity 2

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)))

Syntactic Ergativity 3

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 $DP_{ext/int}-V_i$ and $DP_{ext}-V_t$ on a par
 - 2 **syntactic ergativity**: as with CASE marking, the syntax treats $DP_{ext/int}-V_i$ and $DP_{int}-V_t$ 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.

Ref.: Comrie (1989), Bobaljik (1993), Dixon (1994), Bittner & Hale (1996b,a), Bickel (1999).

Topic Chaining: English

- (28)
- a. Father saw mother
 - b. Father/mother returned
 - c. **Father**₁ saw **mother**₂ and **e**₁/***e**₂ returned
 - d. **Father**₁ returned and **mother**₂ saw ***e**₁/***e**₂

Observation:

Argument realization and argument encoding go hand in hand.

Topic Chaining: Dyirbal

- (29)
- a. η uma banaga-n^yu
father-ABS return-NONFUT
'Father returned.'
 - b. yabu banaga-n^yu
mother-ABS returned-NONFUT
'Mother returned.'
 - c. η uma yabu- η gu bura-n
father-ABS mother-ERG see-NONFUT
'Mother saw father.'
 - d. η uma banaga-n^yu yabu- η gu bura-n
father-ABS return-NONFUT mother-ERG see-NONFUT
'Father₁ returned and mother₂ saw him₁.'
 - e. η uma yabu- η gu bura-n banaga-n^yu
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) ətləy-e talayvənen ekək ənkʔam 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

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.

- 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).

(31) Accusative pattern:

- a. AGENT Θ -role \leftarrow assigned by predicate
- b. THEME/PATIENT Θ -role \leftarrow assigned by verb

(32) Ergative pattern:

- a. AGENT Θ -role \leftarrow assigned by verb
- b. THEME/PATIENT Θ -role \leftarrow 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.
- 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.

Minimalist Analyses 1

- The cases of primary arguments are determined by two different syntactic heads K_1 , K_2 (e.g.: $K_1 = Agr_s$, $K_2 = Agr_o$). 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.

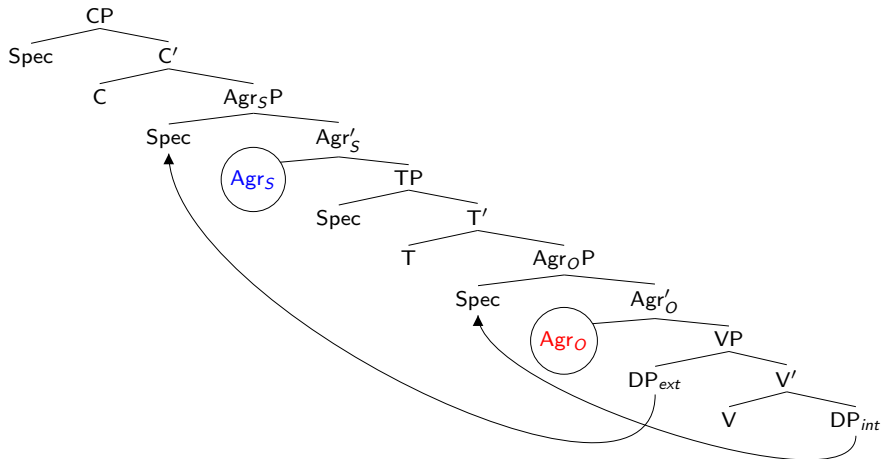
1 ERG, NOM $\rightarrow K_1$

2 ABS, ACC $\rightarrow K_2$

(Chomsky (1993), Bobaljik (1993), Laka (1993), Rezac (2003))

Sketch of an Analysis in Chomsky (1993, 6-10) 1

(33) **Phrase Structure:**



Sketch of an Analysis in Chomsky (1993, 6-10) 2

Assumptions:

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

Sketch of an Analysis in Chomsky (1993, 6-10) 3

(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.

Sketch of an Analysis in Chomsky (1993, 6-10) 4

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*, *absolute*, 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.”

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 extractability 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).”

Minimalist Analyses 2

- 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))

Minimalist Analyses 3

- The cases of primary arguments are determined by two different syntactic heads K_1 , K_2 (e.g.: $K_1 = Agr_s$, $K_2 = Agr_o$). 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 ERG, ACC $\rightarrow K_2$
- 2 NOM, ABS $\rightarrow K_1$

(Murasugi (1992), Jelinek (1993))

Optimality Theoretic Analyses

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:

- $\text{ERG}_{\text{trans}}$ may be viewed as either a markedness constraint or a faithfulness constraint (see Heck et al. (2002)).
- $* \text{ERG}$ 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).)
- 2 The projection of arguments from lexicon to syntax is uniform across languages.
- 3 There are no semantically irrelevant projections like *Agr_sP*, *Agr_oP* (Chomsky (1995, 2001)).
- 4 Case assignment is independent of movement (Chomsky (2000, 2001)).
- 5
 - 1 *ERG*, *ACC* → internal structural case (K_2)
 - 2 *NOM*, *ABS* → external structural case (K_1)
- 6 Internal case is generally morphologically more marked; external case often remains without overt marking (Comrie (1989), Dixon (1994)).

- Aissen, Judith (1999): Markedness and Subject Choice in Optimality Theory, *Natural Language and Linguistic Theory* 17, 673–711.
- Anderson, Stephen (1992): *A-Morphous Morphology*. Cambridge University Press, Cambridge.
- Andrews, Avery (1982): The Representation of Case in Modern Icelandic. In: J. Bresnan, ed., *The Mental Representation of Grammatical Relations*. MIT Press, Cambridge, Mass., pp. 427–503.
- Baker, Mark (1996): *The Polysynthesis Parameter*. Oxford University Press, New York and Oxford.
- Bechert, Johannes (1979): Ergativity and the Constitution of Grammatical Relations. In: F. Plank, ed., *Ergativity*. Academic Press, London, pp. 45–59.
- Benveniste, Emile (1974): *Probleme der allgemeinen Sprachwissenschaft*. Paul List Verlag, München.
- Bickel, Balthasar (1999): Grammatical Relations, Agreement, and Genetic Stability. Ms., University of California at Berkeley.
- Bickel, Balthasar & Johanna Nichols (2001): Inflectional Morphology. Ms., Universität Leipzig. To appear in T. Shopen (ed.), *Language Typology and Syntactic Description*. Cambridge: Cambridge University Press.
- Bierwisch, Manfred (1988): On the Grammar of Local Prepositions. In: M. Bierwisch, W. Motsch & I. Zimmermann, eds., *Syntax, Semantik und Lexikon. Rudolf Růžička zum 65. Geburtstag*. Akademie-Verlag, Berlin, pp. 1–65.
- Bittner, Maria & Ken Hale (1996a): Ergativity: Toward a Theory of a Heterogeneous Class, *Linguistic Inquiry* pp. 531–604.
- Bittner, Maria & Ken Hale (1996b): The Structural Determination of Case and Agreement, *Linguistic Inquiry* pp. 1–68.

- Bobaljik, Jonathan (1993): Ergativity and Ergative Unergatives. In: C. Phillips, ed., *Papers on Case and Agreement II*. Vol. 19 of *MIT Working Papers in Linguistics*, MITWPL, MIT: Cambridge, Mass., pp. 45–88.
- Borer, Hagit (2004): *Structuring Sense. An Exo-Skeletal Trilogy. Vols 1 and 2*. Oxford University Press, Oxford.
- Bresnan, Joan (2001): *Lexical-Functional Syntax*. Blackwell, Oxford.
- Bruening, Benjamin (2001): *Syntax at the Edge: Cross-Clausal Phenomena and the Syntax of Passamaquoddy*. PhD thesis, MIT, Cambridge, Mass.
- Chomsky, Noam (1981): *Lectures on Government and Binding*. Foris, Dordrecht.
- Chomsky, Noam (1993): A Minimalist Program for Syntactic Theory. In: K. Hale & S. J. Keyser, eds., *The View from Building 20*. MIT Press, Cambridge, Mass., pp. 1–52.
- Chomsky, Noam (1995): *The Minimalist Program*. MIT Press, Cambridge, Mass.
- Chomsky, Noam (2000): Minimalist Inquiries: The Framework. In: R. Martin, D. Michaels & J. Uriagereka, eds., *Step by Step*. MIT Press, Cambridge, Mass., pp. 89–155.
- Chomsky, Noam (2001): Derivation by Phase. In: M. Kenstowicz, ed., *Ken Hale. A Life in Language*. MIT Press, Cambridge, Mass., pp. 1–52.
- Comrie, Bernard (1989): *Language Universals and Linguistic Typology*. 2 edn, Blackwell, Oxford.
- Dixon, R.M.W. (1972): *The Dyirbal Language of North Queensland*. Cambridge University Press, Cambridge.
- Dixon, R.M.W. (1994): *Ergativity*. Cambridge University Press, Cambridge.
- Elson, Ben (1960a): *Gramatica Popoluca de la Sierra*. Number 6 in 'Gramáticas de Lenguas Indígenas de México', Biblioteca de la Facultad de Filosofía y Letras, Universidad Veracruzana.
- Elson, Ben (1960b): Sierra Popoluca Morphology, *International Journal of American Linguistics* 20, 206–223.

- Elson, Ben & Velma Pickett (1964): *An Introduction to Morphology and Syntax*. Summer Institute of Linguistics, Santa Ana, California.
- Gregores, Emma & Jorge Suárez (1967): *A Description of Colloquial Guaraní*. Mouton, The Hague.
- Hale, Ken (2001): Navajo Verb Stem Position and the Bipartite Structure of the Navajo Conject Sector, *Linguistic Inquiry* 32, 678–693.
- Hale, Ken & Paul Platero (2000): Navajo Reflections of a General Theory of Argument Structure. Ms., MIT.
- Heck, Fabian, Gereon Müller, Ralf Vogel, Silke Fischer, Sten Vikner & Tanja Schmid (2002): On the Nature of the Input in Optimality Theory, *The Linguistic Review* 19, 345–376.
- Heim, Irene & Angelika Kratzer (1998): *Semantics in Generative Grammar*. Blackwell, Oxford.
- Hualde, José Ignacio & Jon Ortiz de Urbina, eds. (2003): *A Grammar of Basque*. Mouton de Gruyter, Berlin.
- Jelinek, Eloise (1984): Empty Categories, Case, and Configurationality, *Natural Language and Linguistic Theory* 2, 39–76.
- Jelinek, Eloise (1993): Ergative ‘Splits’ and Argument Type. In: J. Bobaljik & C. Phillips, eds., *Papers on Case and Agreement I*. Vol. 18 of *MIT Working Papers in Linguistics*, MITWPL, MIT: Cambridge, Mass., pp. 15–42.
- Kibrik, Aleksandr (1979): Canonical Ergativity and Daghestan Languages. In: F. Plank, ed., *Ergativity*. Academic Press, London, pp. 61–77.
- Kibrik, Aleksandr (1991): Organising Principles for Nominal Paradigms in Daghestan Languages: Comparative and Typological Observations. In: F. Plank, ed., *Paradigms*. Mouton de Gruyter, Berlin, pp. 255–274.

- Kibrik, Aleksandr (2003): Nominal Inflection Galore: Daghestanian, with Side Glances at Europe and the World. In: F. Plank, ed., *Noun Phrase Structure in the Languages of Europe*. Mouton de Gruyter, Berlin, pp. 37–112.
- Kiparsky, Paul (1999): Analogy and OT: Morphological Change as Emergence of the Unmarked. Vortrag auf der 21. Jahrestagung der DGfS, Konstanz. Ms., Stanford University.
- Kress, Bruno (1982): *Isländische Grammatik*. 1 edn, VEB Verlag Enzyklopädie, Leipzig.
- Laka, Itziar (1993): Unergatives that Assign Ergative, Unaccusatives that Assign Accusative. In: J. Bobaljik & C. Phillips, eds., *Papers on Case and Agreement I*. Vol. 18 of *MIT Working Papers in Linguistics*, MITWPL, MIT: Cambridge, Mass., pp. 149–172.
- Lee, Hanjung (2003): Parallel Optimization in Case Systems. Ms., University of Minnesota, Twin Cities.
- Levin, Beth (1983): On the Nature of Ergativity. PhD thesis, MIT, Cambridge, Mass.
- Lind, John (1964): Clause and Sentence Level Syntagmemes in Sierra Popoluca, *International Journal of American Linguistics* 30, 341–354.
- Mahajan, Anoop (1990): The A/A-bar Distinction and Movement Theory. PhD thesis, MIT, Cambridge, Mass.
- Marantz, Alec (1984): *On the Nature of Grammatical Relations*. MIT Press, Cambridge, Mass.
- Marlett, Stephen (1986): Syntactic Levels and Multiattachment in Sierra Popoluca, *International Journal of American Linguistics* 52, 359–387.
- McDonough, Joyce Mary (2000): How to Use Young and Morgan's 'The Navajo Language', *University of Rochester Working Papers in the Language Sciences* 1(2), 195–214.
- Mel'čuk, Igor (1999): Zero Sign in Morphology. In: *Proceedings of the 4th Int. Tbilissi Symposium on Language, Logic, and Computation*. Batumi.

- Murasugi, Kumiko (1992): *Crossing and Nested Paths*. PhD thesis, MIT, Cambridge, Mass.
- Nash, Léa (1996): The Internal Ergative Subject Hypothesis. In: K. Kusumoto, ed., *Proceedings of NELS 26*. GLSA, Amherst, Mass, pp. 195–209.
- Nichols, Johnanna (1986): Head-Marking and Dependent-Marking Grammar, *Language* 62, 56–119.
- Ortiz de Urbina, Jon (1989): *Parameters in the Grammar of Basque: A GB Approach to Basque Syntax*. Foris, Dordrecht.
- Plank, Frans (1995): Ergativity. In: J. Jacobs, A. von Stechow, W. Sternefeld & T. Vennemann, eds., *Syntax. Ein internationales Handbuch zeitgenössischer Forschung*. Vol. 2, de Gruyter, Berlin, pp. 1184–1199.
- Plank, Frans (1999): Split Morphology: How Agglutination and Flexion Mix, *Linguistic Typology* 3.
- Primus, Beatrice (1995): Relational Typology. In: J. Jacobs, A. von Stechow, W. Sternefeld & T. Vennemann, eds., *Syntax. Ein internationales Handbuch zeitgenössischer Forschung*. Vol. 2, de Gruyter, Berlin, pp. 1076–1109.
- Reinhart, Tanya (2003): The Theta System – An Overview, *Theoretical Linguistics* 28, 1–35.
- Rezac, Milan (2003): The Fine Structure of Cyclic Agree, *Syntax* 6, 156–182.
- Sigurðsson, Halldór (1989): Verbal Syntax and Case in Icelandic. PhD thesis, University of Lund.
- Sigurðsson, Halldór (2002a): To be an Oblique Subject: Russian vs. Icelandic, *Natural Language and Linguistic Theory* pp. 691–724.
- Sigurðsson, Halldór (2002b): To be an Oblique Subject: Russian vs. Icelandic, *Natural Language and Linguistic Theory* pp. 691–724.
- Silverstein, Michael (1976): Hierarchy of Features and Ergativity. In: R. Dixon, ed., *Grammatical Categories in Australian Languages*. Australian Institute of Aboriginal Studies, Canberra, pp. 112–171.

- Speas, Margaret (1990): *Phrase Structure in Natural Language*. Kluwer, Dordrecht.
- Speas, Margaret (1991): Functional Heads and the Mirror Principle, *Lingua* 84, 181–214.
- Stiebels, Barbara (2000): Linker Inventories, Linking Splits and Lexical Economy. In: B. Stiebels & D. Wunderlich, eds., *Lexicon in Focus*. Akademie-Verlag, Berlin, pp. 211–245.
- Taraldsen, Knut Tarald (1995): On Agreement and Nominative Objects in Icelandic. In: H. Haider, S. Olsen & S. Vikner, eds., *Studies in Comparative Germanic Syntax*. Kluwer, Dordrecht, pp. 307–327.
- Thráinsson, Höskuldur (1994): Icelandic. In: E. König & J. van der Auwera, eds., *The Germanic Languages*. Routledge, pp. 142–189.
- Wichmann, Søren (1993): Grammaticalization in Mixe-Zoquean Languages, *Sprachtypologie und Universalienforschung* 46, 45–60.
- Woolford, Ellen (2001): Case Patterns. In: G. Legendre, J. Grimshaw & S. Vikner, eds., *Optimality-Theoretic Syntax*. MIT Press, Cambridge, Mass., pp. 509–543.
- Wunderlich, Dieter (1997): Cause and the Structure of Verbs, *Linguistic Inquiry* 27, 27–68.
- Young, Robert & William Morgan (1987): *The Navajo Language*. University of New Mexico Press, Albuquerque.