

Linguistic typology and language universals

Course script PART 2 - Holger Diessel

Word order typology

Lindsay J. Whaley. 1997. Introduction to Linguistic Typology. The Unity and Diversity of Language, chap 5. Thousands Oaks: Sage Publications

Basic word order

Japanese

SOV

(1) Taro ga inu o mita

Taro SUB dog OBJ saw

‘Taro saw the dog.’

Kinyarwanda

SVO

(1) Umugore arasoma igitabo

woman 3S-read book

‘The woman is reading a book.’

Welsh

VSO

(1) lladdodd y ddraig y dyn

killed the dragon the man

‘The dragon killed the man.’

Malagasay

VOS

- (1) Manasa lamba amin'ny savony ny lehilahy
washes clothes with.the soap the man
'The man washes clothes with the soap.'

Hixkaryana

OVS

- (1) toto yahosiye kamara
man it.grabbed.him jaguar
'The jaguar grabbed the man.'

Urubú

OSV

- (1) pako xuā u'u
banana John he.ate
'John ate bananas.'

English

- (1) Peter bought the blue book. SVO
(2) *Bought Peter the blue book. VSO
(3) *Bought the blue book Peter. VOS
(4) *Peter the blue book bought. SOV
(5) *The blue book Peter bought. OSV

(6) The blue book, Peter bought. OSV
(7) Never did Peter buy a book. ADV-AUX-SVO
(8) Across the bridge lived an old man. ADV-VS

Ancient Greek

- (1) ho didaskal-os paideuei to paidi-on SVO
ART teacher-NOM teaches ART boy-ACC
'The teacher instructs the boy.'
- (2) ho didaskal-os to paidi-on paideuei SOV
- (3) paideuei ho didaskal-os to paidi-on VSO
- (4) paideuei to paidi-on ho didaskal-os VOS
- (5) to paidi-on ho didaskal-os paideuei OSV
- (6) to paidi-on paideuei ho didaskal-os OVS

Walpiri

- (1) ngarraka-ngku ka wawirri panti-rni SOV
man-ERG AUX kangaroo spear-NONPST
'The man is spearing the kangaroo.'
- (2) wawirri ka panti-rni ngarraka-ngk OVS
- (3) wawirri ka ngarraka-ngku panti-rni OSV
- (4) ngarraka-ngku ka panti-rni wawirri SVO
- (5) panti-rni ka wawirri ngarraka-ngku VOS
- (6) panti-rni ka ngarraka-ngku wawirri VSO

Some non-configurational languages employ discontinuous NPs.

Walpiri

- (1) **wawirri** kapirna panti-rni **yalumpa**
kangaroo AUX spear-NONPST that
'I will spear the kangaroo.'

German

- | | |
|--|---------|
| (1) Peter kaufte das blaue Buch. | SVO |
| (2) Das blaue Buch kaufte Peter. | OVS |
| (3) *Kaufte Peter das blaue Buch. | VSO |
| (4) *Kaufte das blaue Buch Peter. | VOS |
| (5) *Das blaue Buch Peter kaufte. | OSV |
| (6) *Peter das blaue Buch kaufte. | SOV |
|
 | |
| (7) Gestern kaufte Peter das blaue Buch. | ADV-VSO |
|
 | |
| (8) Peter hat das blaue Buch gekauft. | |
| (9) Das blaue Buch hat Peter gekauft. | |

Distribution of basic word orders

Table 1. Basic word order (Tomlin 1986)

Order	Number of languages	%
SOV	180	45
SVO	168	42
VSO	37	9
VOS	12	3
OVS	5	1
OSV	0	0
Total	402	100

Table 2. Ordering principles of S, V and O

Order	Subject saliency	Verb Phrase (VO / OV)
SVO	+	+
SOV	+	+
VSO	+	-
VOS	-	+
OVS	-	+
OSV	-	-

Word order correlations

Since Greenberg (1966) it is known that languages tend to employ certain ordering patterns across phrases. For instance, in SOV languages the genitive (i.e. the possessor) almost always precedes the noun and adpositions almost always follow the associated noun phrase. By contrast, in VSO languages the genitive almost always follows the noun and adpositions almost always precede the noun phrase.

Tamil (Dravidian)

(1) vaakkiil pustakatt-ey pati-tt-aan SOV

Lawyer book-OBJ read-PST-3SG.MAC

‘The lawyer read the book.’

(2) payyan-ukke pennu. GEN N

boy-GEN pen

‘This is that boy’s pen.’

(3) atu viitt-ukku akette iru-kk-u NP P

It house-to inside be-PRS-it

‘It is inside the house.’

Japanese (Japanese)

- (1) John ga Mary o but-ta SOV
 John SUBJ Mary OBJ bit-PST
 ‘John hit Mary.’
- (2) John no imooto GEN N
 John GEN sister
 ‘John’s sister.’
- (3) John ga Mary to kuruma de kobe ni it-ta NP P
 John SUBJ Mary with car by Kobe to go.PST
 ‘John went to Kobe by car with Mary.’

Jacaltec (Mayan)

- (1) slok nja pel no’ cheh c’ej’in VSO
 bought CLASS Peter CLASS horse black
 ‘Peter bought the black horse.’
- (2) s-man naj xuwan N GEN
 His-father CLASS John
 ‘John’s father’
- (3) x-in-mak metx tx’i yu hune’ te’ P NP
 PST-I-hit CLASS dog with a stick
 ‘I hit the dog with a stick.’

Welsh (IE)

- (1) lladdodd y dyn y bachgen VSO
 kill-3SG ART man ART boy
 ‘The man killed the boy.’
- (2) braich y ferch N GEN
 arm ART girl
 ‘the girl’s arm’

(3) rhoddaf y llyfr I Sion
 gave-I the book to Sion
 ‘I gave the book to Sion.’

P NP

VO	OV
prepositional	postpositional
head-initial	head-final
right-branching	left-branching

Table 3. Word order correlations

VO	OV
Preposition-Noun	Noun-Postposition
Noun-Genitive	Genitive-Noun
ART-N	N-ART
AUX-V	V-AUX
NEG-V	V-NEG
SUB-Clause	Clause-SUB
N-REL	REL-N
V-COMP	COMP-V
MAIN-ADV	ADV-MAIN
COPULA-NP/ADJ	NP/ADJ-COPULA
Comparative.ADJ-STANDARD	STANDARD-Comparative.ADJ
Prefixes	Suffixes
Sentence initial WH word	Non-initial WH word

Implicational word order universals

Table 1. Ordering of noun and relative clause (Dryer 1992)

	VO	OV
N-REL	98.5	59.0
REL-N	1.5	41.0

If a language has basic VO order, the relative clause almost always follows the head noun.

English VO

(1) The book [I bought]

Japanese OV

(1) [Maria ga kai-ta] hon

Maria SUBJ write-PST book

‘The book that Mary wrote.’

Persian OV

(1) Mardi [ke bolandqadd bud] juje-ra koft.

Man that tall was chicken-ACC killed

‘The man that was tall killed the chicken.’

Table 2. Ordering of noun and genitive (Dryer 1992)

	VO	OV
GEN-N	32	90
N-GEN	68	10

If a language has basic OV order, the genitive almost always precedes the head noun.

Table 3. Position of subordinator in the subordinate clause (Dryer 1992)

	VO	OV
Final SUB	1.5	69
Initial SUB	98.5	31

If a language has basic VO order, the subordinator almost always occur at the beginning of the subordinate clause.

Table 4. Occurrence of prepositions and postpositions (Dryer 1992)

	VO	OV
Prepositions	85	6
Postpositions	15	94

If a language has basic VO order, it tends to employ prepositions, and if a language has basic OV order, it tends to employ postpositions.

Table 5. Positioning of auxiliaries (Dryer 1992)

	VO	OV
AUX V	87.5	8
V AUX	12.5	92

If a language has basic VO order, it tends to place auxiliaries before the main verb, and if a language has basic OV order, it tends to place auxiliaries after the main verb.

Table 6. The positioning of articles (Dryer 1992)

	VO	OV
ART N	71	40
N ART	28	60

If a language has basic VO order, it tends to place the article before the noun, and if it has OV order, it tends to place the article after the noun.

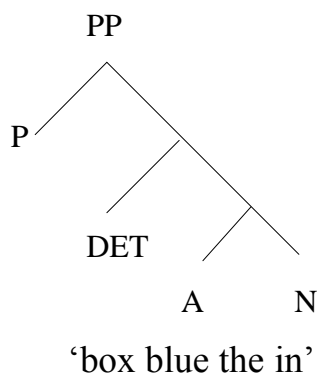
Explaining word order correlations

Implicational universals require an explanation in terms of competing motivations. At least two competing factors are involved:

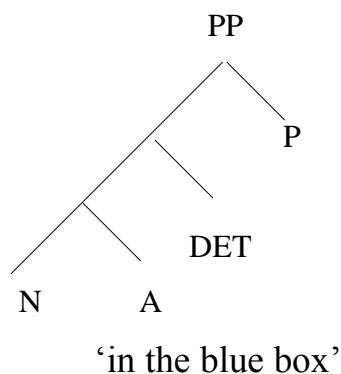
1. First, we have to explain the symmetry in constituent order across languages, i.e. why are there word order correlations.
2. Second, we have to account for the exceptions, i.e. why do VO and OV languages do not pattern consistently.

Hawkins (1994/2004): Languages tend to be consistently right-branching or consistently left-branching rather than mixed left- and right branching because languages with consistent branching directions are easier to process.

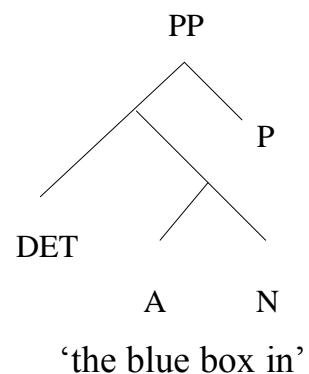
a. right-branching



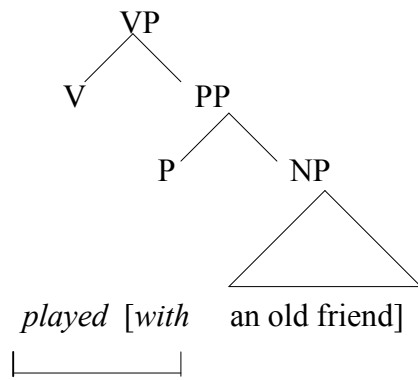
b. left-branching



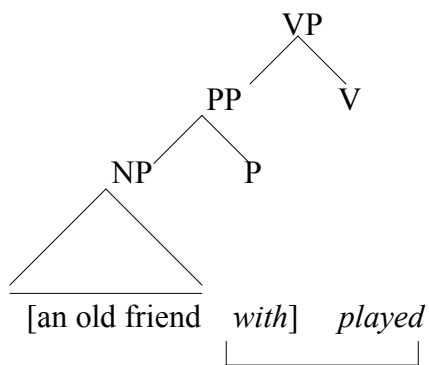
c. mixed branching



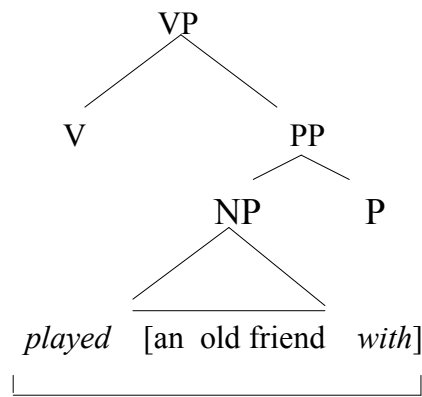
(1)



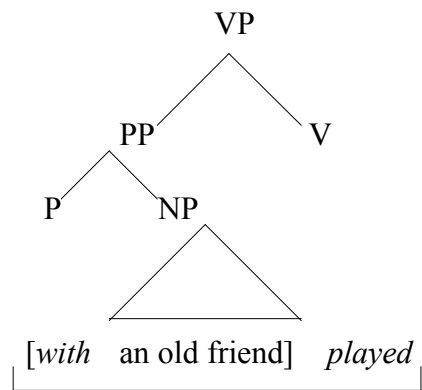
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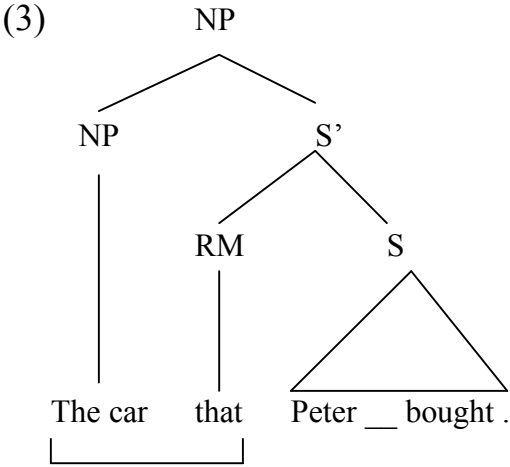
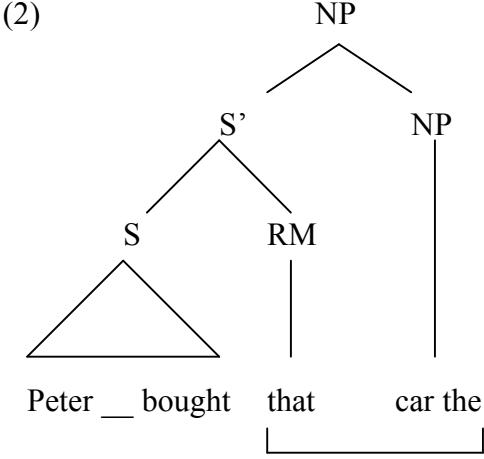
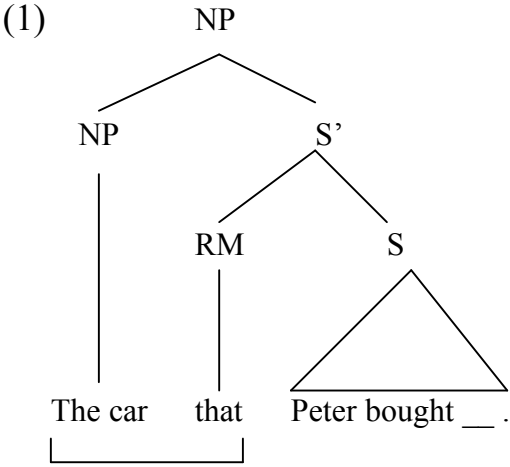
(3)



(4)



Competing motivations: The positioning of Relative clauses



(1)	NPi	PROi	anaphoric
	PROi	NPi	cataphoric

Table 1. The positioning of relative clauses

	VO	OV
NP S	X	X
S NP		X

The notion of subject

Bernard Comrie. 1989. *Language Universals and Linguistic Typology*.
Chicago: Chicago University Press. Chapter 5.

Keenan (1976): The category subject is defined by three types of features:

1. coding properties
2. behavioural properties
3. semantic properties

Coding properties

1. Position: Across languages, the subject tends to precede the object
2. Case: If there is morphological case marking, the subject tends to be unmarked (notably in intransitive clauses)

Table 1. Case marking in Old English

	SG	PL
NOM	stan	stan-as
GEN	stan-es	stan-a
DAT	stan-e	stan-um
ACC	stan	stan-as

Table 2. Case marking in Latin

	king	boy	queen
NOM	rex	puer	regin-a
GEN	reg-is	puer-i	regin-ae
DAT	reg-i	puer-o	regin-ae
ACC	reg-em	puer-um	regin-am
ABL	reg-e	puer-o	regin-a

3. Agreement: If there is head-marking / agreement marking on the verb, the subject is the element that is most frequently expressed by an agreement marker.

(2) Lakota

- a. wafitju ki matho ki Ø-Ø-kte
whiteman the bear the 3SG-3SG-kill
'The white man killed the bear.'
- b. matho ki Ø-wa-kte
bear the 3SG-1SG-kill
'I killed the bear.'

Behavioral properties

1. The subject is the controller of a 'gapped' NP in a coordinate clause.
2. The subject is the controller of a 'gapped' NP in non-finite adverbial clauses.
3. The subject is the controller of a reflexive pronoun.
4. The subject is the controller of a pronominal element in a fronted adverbial clause (backwards pronominalization)

(1) When she is in New York, Sally always visits the Museum of Modern Arts.

5. The subject is often omitted in imperative sentences.

(1) Open the window!

6. The subject is the only role that can be relativized in all languages.

- (1) The man who saw Mary.
- (2) The man who(m) Mary saw.
- (3) The man who(m) Peter gave the book to.
- (4) The man who(m) the dog ran to.

Semantic / pragmatic properties

1. The subject tends to be the actor / agent.
2. The subject tends to be the topic / theme.

- (1) There was an old man. He lived in a small house.

Case marking

(1) Tamil (Whaley 1997:167)

Nominative	maram	‘tree’
Accusative	maratt-ai	‘tree’
Genitive	maratt-utaiya	‘of the tree’
Dative	maratt-ukku	‘to the tree’
Locative	maratt-il	‘at the tree’
Ablative	maratt-iliruntu	‘from the tree’
Instrumental	maratt-al	‘using the tree’
Sociative	maratt-out	‘(together) with the tree’

The occurrence of ‘zero marking’ is predictable from an implicational scale called the case hierarchy:

Case Hierarchy

Subject < Direct object < Indirect object < others

Agreement

(1) English (SUBJ)

Peter like-s bananas

(2) Swahili (SUBJ + DO)

Ni-li-m-piga

1SG.SUBJ-PST-3SG.OBJ-hit

‘I hit him/her.’

(3) Abkhaz (SUBJ + DO + IO)

a-xac'a a-phəs a-ʃq'ə Ø-lə-y-te-yt'
the-man the woman the book it-her-he-gave-FINIT
'The man gave the woman the book.'

(4) Kinyarwanda (SUBJ + DO + IO + BEN)

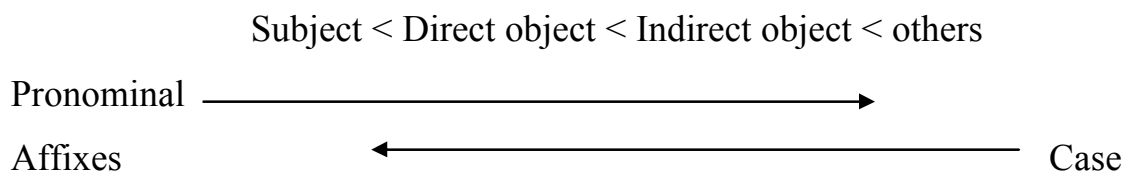
y-a-kí-mú-bá-hé-er-eye
He-PST-it-him-them-give-BEN-SAP
'He gave it to him for them.'

(5) Turkish (Whaley 1997:154)

a. Ben bu makale-yi yarın bitir-eceğ-im
I this article-ACC tomorrow finish-FUT-1SG
'I shall finish this article tomorrow.'

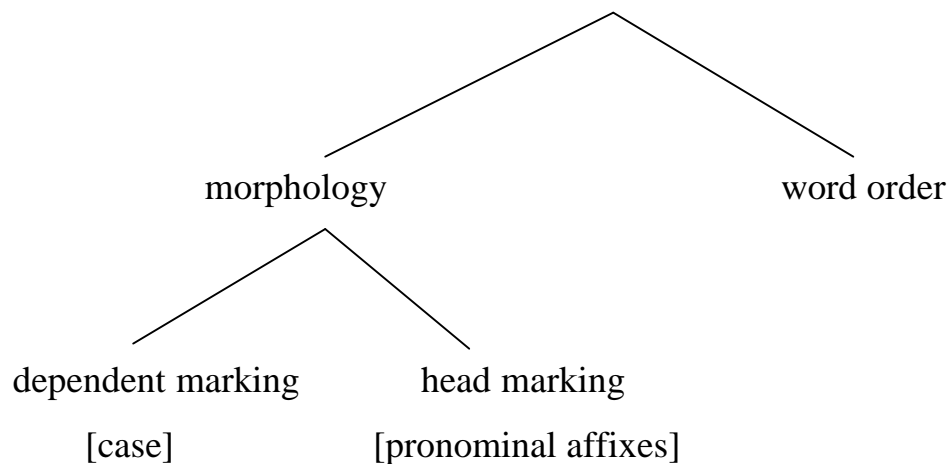
b. Hasan çocuğ-a elma-yı ver-di
Hasan child-DAT apple-ACC give-PST
'Hasan gave the apple to the child.'

c. Kitap-lar masa-dan yer-e düş-tü
book-PL table-ABL floor-DAT fall-PST
'The books fell from the table to the floor.'



Ergativity

Lindsay J. Whaley. 1997. Introduction to Linguistic Typology. The Unity and Diversity of Language, chap 8. Thousands Oaks: Sage Publications



Case marking

(1) German

- a. Der Mann schläft.
- b. Der Mann sieht den Vogel.

(2) Dyirbal (Dixon 1994: 10)

- a. η uma banaga- η u
father return-NONFUT
'Father returned.'
- b. yabu banaga- η u
mother return-NONFUT
'Mother returned.'

- c. η uma yabu- η gu bura-n
 father mother-CASE see-NONFUT
 ‘Mother saw father.’
- d. yabu η uma- η gu bura-n
 mother father-CASE see-NONFUT
 ‘Father saw mother.’

S = subject of intransitive clause

A = subject of transitive clause

P = direct object

Case and agreement

(1) Quechua (Whaley 1997: 156)

- a. Juan- \emptyset away-n
 Juan-CASE go-3SG
 ‘He goes.’
- b. Juan- \emptyset maqa-na-n
 Juan-CASE hit-1SG-3SG
 ‘Juan hit me.’
- c. Juan- \emptyset Pedro-ta maqa-n- \emptyset
 Juan-CASE Pedro-CASE hit-3SG-3SG
 ‘Juan hits Pedro.’

(2) Avar (Whaley 1997: 157)

- a. w-as- \emptyset w-eker-ula
 M-child-CASE M-run-PRS
 ‘The boy runs.’

- b. inssu-cca j-as-Ø j-écc-ula
 father-CASE F-child-CASE F-praise-PRS
 ‘Father praises the girl.’

Word order

(1) Pãri (Dixon 1994: 51)

- a. ùbúr á-túuk’ SV
 Ubur ASP-play
 ‘Ubur played.’
- b. jòobi á-kèel ùbúrr-i PVA
 buffalo ASP-shoot Ubur-ERG
 ‘Ubur shot the buffalo.’
- c. ùbúr, jòobi á-kèel-é A, PV
 Ubur buffalo ASP-shoot-3SG.AG
 ‘It was Ubur who shot the buffalo.’

About 25% of the world’s languages have an ergative pattern in some parts of their grammar. Ergative case-marking and ergative agreement marking are common. However, ergative word order patterns (like in Pãri) are rare.

- c. ɲura banaga-ɲu
 2PL return-PST
 ‘You returned.’
- d. yabu ɲuma-ɲgu bura-n
 mother father-CASE see-PST
 ‘Father saw mother.’
- e. ɲana ɲura-na bura-n
 1PL 2PL-CASE see-PST
 ‘We saw you.’
- f. ɲura ɲana-na bura-n
 2PL 1PL-CASE see-PST
 ‘You saw us.’

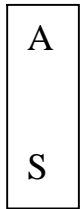
Animacy hierarchy

$1^{\text{st}}/2^{\text{nd}} > 3^{\text{rd}} > \text{proper name/kin term} > \text{human NP} > \text{animate NP} > \text{inanimate NP}$

	Nominative	Ergative
Dyirbal	$1^{\text{st}} / 2^{\text{nd}}$	3^{rd} ...
Yidin	$1^{\text{st}} / 2^{\text{nd}} / 3^{\text{rd}} / \text{DEM} / \text{proper name}$	common N ...

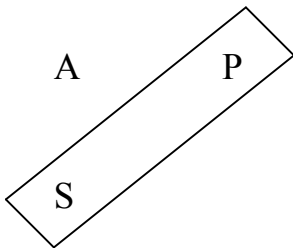
Alignment patterns

Accusative



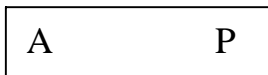
common

Ergative



25% of the world's languages

A-P vs. S



unattested

S

Tripartite



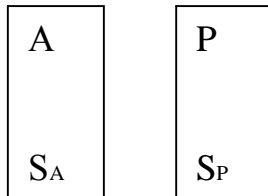
rare



(1) Wangkumara (Whaley 1997: 158)

- a. kana-**ulu** kalkana titi-**nana**
man-ERG hit dog-ACC
'The man hit the bitch'
- b. kana-**ia** paluna
man-NOM died
'The man died.'

Split intransitivity



(1) Eastern Pomo (Whaley 1997: 161)

- a. xá:su:là wí ko:kóya
Rattlesnake 1SG.PA bit
'A rattlesnake bit me.'
- b. há: mí:pal sá:ka
1SG.AG him killed
'I killed him.'
- c. wí qa:lálma
1SG.PA sick
'I got sick.'
- d. há: xá:qákki
1SG.AG bathe
'I bathed.'

- e. wí ce:xélka
 1SG slip
 ‘I am slipping.’ (accidentally)
- f. há: ce:xélka
 1SG slip
 ‘I am sliding.’ (deliberately)

(2) Choctaw (Dryer workbook)

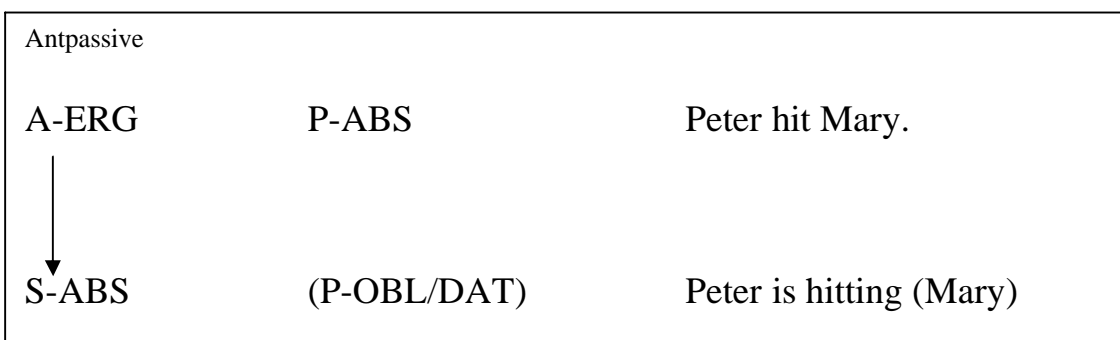
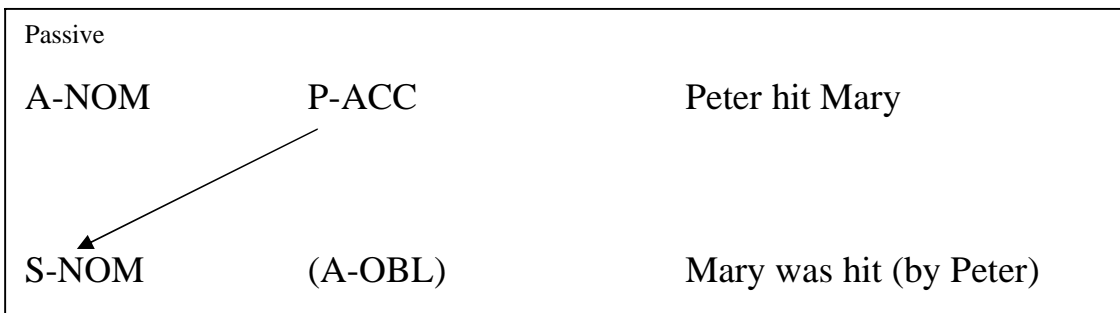
- a. katos pisa-li-tok
 cat see-1SG-PST
 ‘I saw the cat.’
- b. katos lhioli-li-tok
 cat chase-1SG-PST
 ‘I chased the cat.’
- c. chi-bashli-li-tok
 2SG-cut-1SG-PST
 ‘I saw you.’
- d. chi-yimmi-li
 2SG-believe-1SG
 ‘I believe you.’
- e. ofiyat sa-kopoli-tok
 Dog 1SG-bit-PST
 ‘The dog bit me.’
- f. is-sa-bashhli-tok
 2SG-1SG-cut-PST
 ‘You cut me.’
- g. bali:li-li-tok
 run-1SG-PST
 ‘I ran.’

- (5) a. Er hat/ist gelaufen.
 b. Er ist in den Wald gelaufen.
 c. *Er hat in den Wald gelaufen.

Syntactic ergativity

Ergativity is primarily a morphological phenomenon, but there are also syntactic phenomena that exhibit an ergative pattern.

The antipassive



The antipassive is a valence-changing construction that can be compared to the passive in nominative-accusative languages.

(1) Dyirbal (Dixon 1994: 161, 164)

Active

- a. yabu-Ø ŋuma-ŋgu bura-n
mother-ABS father-ERG see-NONFUT
'Father saw mother.'

Antipassive

- b. ŋuma-Ø bural-ŋa-ŋu yabu-gu
father-ABS see-ANTIPASS-NONFUT mother-DAT
'Father saw mother.'

Constructions that are always nominative-accusative across languages

Imperative

(1) Dyirbal (Comrie 1989:117) (1. and 2. person are NOM-aligned in Dyirbal)

- a. (ŋinda) bani.
You.NOM come.here.IMP
'Come here!'
- b. (ŋinda) bayi yara balga.
You.NOM CLASS.ABS man hit.IMP
'Hit the man!'

Control INF-clauses (begin, finish, want, try)

(1) Dyirbal (Dixon 1994:134-5)

a. yara-ŋga mija-∅ wamba-n
man-ERG house-ABS build-NONFUT
‘The man built the house.’

b. yara-ŋga mija-∅ wamba-n [jayŋn-n]
man-ERG house-ABS build-NONFUT finish-NONFUT
‘The man finished building the house.’

Constructions that are syntactically ergative in some languages

Coordination

(1) English

Mother saw father and ___ returned.

(2) Dyirbal (Dixon 1994:161-5; leicht abgewandelt)

S-pivot

a. ŋuma-∅ banaga-ŋu miyandn-ŋu
father-ABS return-NONFUT laugh-NONFUT
‘Father returned (and) laughed.’

P-pivot

b. ŋuma-∅ yabu-ŋgu bura-n banaga-ŋu
father-ABS mother-ERG saw-NONFUT return-NONFUT
‘Mother saw father and (he) returned.’

S-pivot of antipassive (S = A of transitive)

c. η uma-gu yabu- \emptyset bura- η a- η u banaga- η u
father-DAT mother-ABS saw-ANTPAS-NONFUT return-NONFUT
'Mother saw father and (she) returned.'

Nominative	P	A ₁	V	and	__	₁	V
Ergative	P ₁	A	V	and	__	₁	V
Antipassive	DAT	S ₁	V _{ANTIPAS}	__	₁	V	

Explaining ergativity

DuBois (1987) argues that both patterns are functionally motivated.

- A nominative-accusative pattern is motivated by syntactic and pragmatic factors.
- An ergative pattern is motivated by the fact that S and P tend to occur with different types of expressions than A. Across languages S and P tend to be expressed by lexical NPs while A is overwhelmingly pronominal.

- (1) a. John is sleeping. NP V
b. He saw John. PRO V NP

>>> What do you think about this explanation. Does the encoding of different types of nominal expressions motivate an ergative-absolutive pattern?

Historical explanations: Passive sentences that are reanalyzed as active sentence give rise to an ergative pattern:

(1) Schematic example (e.g. Hindi)

- a. Man kick ball-ACC. active (frequent)
- b. Ball kick man-by. passive (infrequent)
- c. Ball kick man-by. passive (frequent)
- d. Man-by kick ball active (by = ERG)

Ergative case marking can also emerge from constructions including an instrumental NP.

(2) Schematic example (e.g. Hittite)

- a. Man- \emptyset opened door-ACC key-INST.
- b. ___ opened door-ACC key-INST.
- c. key-INST opened door-ACC. (INST = ERG)

Relative clauses

Lindsay J. Whaley. 1997. Introduction to Linguistic Typology. The Unity and Diversity of Language, chap 15-16. Thousands Oaks: Sage Publications

Types of relative clauses

Head of the relative clause

- | | |
|--|------|
| (1) The book <u>I bought</u> is very expensive. | SUBJ |
| (2) He read the book <u>I bought</u> . | OBJ |
| (3) He put the cup on the book <u>I bought</u> . | OBL |

Relativized element

- | | |
|---|------|
| (1) This is the man <u>who came into the store</u> . | SUBJ |
| (2) This is the man <u>who I met on the bus</u> . | OBJ |
| (3) This is the man <u>who I talked to on the bus</u> . | OBL |
| (4) This is the man <u>whose dog bit me</u> . | GEN |

Restrictive vs. non-restrictive relative clauses

- | | |
|--|-----------------|
| (1) The cat chased the mouse <u>that had stolen the cheese</u> . | Restrictive |
| (2) The cat chased the mouse, <u>which had stolen the cheese</u> . | Non-restrictive |

Headed vs. headless relative clauses

- | | |
|---|----------|
| (1) The thing <u>I bought</u> was very expensive. | Headed |
| (2) <u>What I bought</u> was very expensive. | Headless |

Postnominal vs. pronominal

(1) The book I bought is interesting. Postnominal

(2) Japanese Prenominal

Yamada-san ga ka'te-te i-ru sa'ru
Yamada-Mr SUBJ keep-PART be-PRS monkey
'the monkey which Mr Yamada keeps'

Relativization strategies

1. Relative pronoun

German

- (1) Das ist der Mann, der das Buch gekauft hat. SUBJ
(2) Das ist der Mann, den ich gestern getroffen habe. OBJ
(3) Das ist der Mann, mit dem ich gestern gesprochen habe. OBL
(4) Das ist der Mann, dessen Hund vorhin gebellt hat. GEN

2. Gap

English

- (1) That's the man who ___ bought the book. SUBJ
(2) That's the man (who) I met ___ yesterday. OBJ
(3) That's the man (who) I talked to ___ yesterday. OBL

3. Resumptive pronoun

Hebrew (Keenan & Comrie 1979:338; Keenan 1985: 146)

- (1) Yohanan makir et ha-isha she (**hi**) yeshena. SUBJ
John knows OBJ the-woman that she sleeps
'John knows the woman who is sleeping.'
- (2) Yohanan makir et ha-ish she ha-isha hikta (**oto**). OBJ
John knows OBJ the-man that the-woman hit him
'John knows the man who the woman hit.'
- (3) ha-sarim she-ha-nasi shalax **otam** la-mitsraim IO
The-ministers that-the-President sent them to Egypt
'The minister that the President sent to Egypt.'

Resumptive pronouns in English:

- (1) This is the road that I know where **it** leads.

4. Internally-headed relative clauses

Bambara (Comrie 1989:145)

- (1) Tyε be [n ye so min ye] dyɔ
Man.the PRS I PST house REL see build
'The man is building the house that I saw.'

Wappo (Keenan 1985:162)

- (1) [ʔi chuya-∅ tumt]-i shoyikhi?
I house-DO bought-SUBJ burned.down
'The house I bought burned down.'

The accessibility hierarchy

English

- | | |
|---|------|
| (1) That's the man who __ bought the book. | SUBJ |
| (2) That's the man (who) I met __ yesterday. | DO |
| (3) That's the man (who) I gave the book to __. | IO |
| (4) That's the man (who) I went to __. | OBL |
| (5) That's the man whose dog is barking. | GEN |
| (6) a. The man __ talking to Sally is a friend of mine. | SUBJ |
| b. *The man Sally talking to __ is a friend of mine. | OBL |

Malagasy (Comrie 1989: 156)

- | | |
|--|------|
| (1) ny mpianatra [izay nahita ny vehivavy] | SUBJ |
| The student that saw the woman | |
| 'The student that saw the woman.' | |

Kinyarwanda (Comrie 1989: 157)

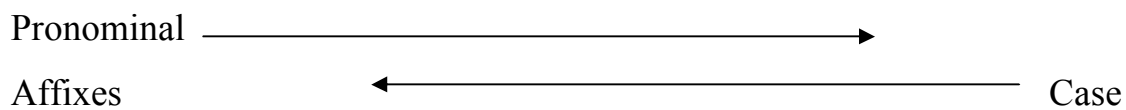
- | | |
|--|------|
| (1) n-a-bonye umugabo [w-a-kubise abagore] | SUBJ |
| I-PST-see man REL-PST-strike woman | |
| 'I saw the woman who struck the woman.' | |
| (2) n-a-bonye abagore [Yohani y-a-kubise] | OBJ |
| I-PST-see woman John REL-PST-strike | |
| 'I saw the woman who John struck.' | |

Basque (Keenan & Comrie 1989: 72)

- | | |
|--|------|
| (1) [emakume-a-ri liburu-a eman dio-n] gizon-a | SUBJ |
| woman-the-IO book-the give has-REL man-the | |
| 'The man who has given the book to the woman.' | |

- (2) [gizon-a-k emakume-a-ri eman dio-n] liburu-a DO
 man-the-SUBJ woman-the-IO give has-REL book-the
 ‘The book that the man has given to the woman.’
- (3) [gizon-a-k liburu-a eman dio-n] emakume-a IO
 man-the-SUBJ book-the give has-REL woman-the
 ‘The woman that the man has given to the book to.’

Subject < Direct object < Indirect object < others



SUBJ > DO > IO/OBL > GEN

Malay (Comrie 1989: 157)

- (1) Gadis [yang dukduk di atas bangku] itu kakak Ali
 Lady that sit on top bench the elder.sister Ali
 ‘The lady who sat on the bench is Ali’s elder sister.’
- (2) Orang [yang abang-nya memukul saya] itu
 Person that elder.brother-his hit me the
 ‘the person whose elder brother hit me’

Table 1. The occurrence of resumptive pronouns

	SUBJ	DO	IO	OBL	GEN
Uroho	+	+	+	+	+
Slovenian		+	+	+	+
Welsh			+	+	+
Fulani				+	+
Malay					+

The absolutive hierarchy

Revised accessibility hierarchy (Fox 1987)

ABS > ERG > IO/OBL > GEN

Explaining the accessibility hierarchy

English

- | | |
|---|------|
| (1) That's the man who __ bought the book. | SUBJ |
| (2) That's the man (who) I met __ yesterday. | DO |
| (3) That's the man (who) I went to __. | OBL |
| (4) That's the man (who) I gave the book to __. | IO |

Filler-gap hypothesis: The longer the distance between filler and gap the longer the parser has to keep un-integrated information in short term memory.

Animacy

Lindsay J. Whaley. 1997. Introduction to Linguistic Typology. The Unity and Diversity of Language, chap 10. Thousands Oaks: Sage Publications

Table 1. Animate and inanimate WH words

	English	German	Malayalam	Finnish	Latvian
Animate	who	wer	evan	kuka	kas
Inanimate	what	was	etu	mikä	kas

The animacy hierarchy

1st/2nd > 3rd > proper name/kin term >
 human NP > animate NP > inanimate NP

(1) Dyirbal (Whaley 1997: 163-4)

- a. *nura banaga-ju*
 2PL return-PST
 ‘You returned.’
- b. *nura ŋana-na bura-n*
 2PL 1PL-CASE see-PST
 ‘You saw us.’
- c. *ŋuma banaga-ju*
 father return-PST
 ‘Father returned.’

- d. yabu ɲuma-ɲgu bura-n
 mother father-CASE see-PST
 ‘Father saw mother.’

Table 2. NP splits in Australian languages

	Nominative	Ergative
Wanggumara	--	All
Dyirbal	1 st /2 nd	Rest
Gumbainggir	1 st /2 nd + 3 rd + proper/kin	Rest
Arabana	1 st /2 nd + 3 rd + proper/kin > human	Rest
Thargari	1 st /2 nd + 3 rd + proper/kin > human > animate	Rest
Yalarnnga	All	--

Apart from animacy, there are various other semantic/pragmatic factors that contribute to the hierarchy:

1. animate vs. inanimate referents
2. speech act participants vs. other referents
3. familiar referents vs. nonfamiliar referents
4. human vs. nonhuman referents

Instantiations of the animacy hierarchy

1. Case marking

Malayalam (Whaley 1997: 175)

- (1) awal awane kantu
 She.NOM him.ACC saw
 ‘She saw him.’

- (2) awal pustakam kantu
 She.NOM book.NOM saw
 ‘She saw the book.’

2. *Word order*

Sesotho (Whaley 1997: 175)

- (1) ke-phehétsé ngoaná lijó
 1SG-cooked child food
 ‘I cooked the child food.’
- (2) *ke-phehétsé lijó ngoaná
 1SG-cooked food child
 ‘I cooked the child food.’
- (3) ke-bítselfétsé morena baná
 1SG-called chief children
 ‘I called the chief for the children’ or ‘I called the children for the chief’
- (4) ke-bítselfétsé baná morena
 1SG-called children chief
 ‘I called the chief for the children’ or ‘I called the children for the chief’

3. *Verb agreement*

Tangut (Whaley 1997: 174)

- (1) ni tɪn nga ɪn lɪɪə thɪ-nga 1st > 2nd
 You if me ACC indeed chase-1
 ‘If indeed you are chasing me...’
- (2) ku that tsɪ viəθɪ-na 2nd > 3rd
 Then 3SG also chase-2
 ‘then chase her too.’

(3) mei-swen manə na khe-na 2nd > proper
 Mei-swen formerly you hate-2
 ‘Mei-swein formerly hated you.’

(4) ni pha ngimbɪn ndɪsiei-na 2nd > human
 You other wife choose-2
 ‘Choose another wise!’

1st > 2nd > other

4. Voice

Navaho (Comrie 1989:193, 197)

(1) dine ‘ashkii y-oo’í
 Man boy ACT-see
 ‘The man sees the boy.’

(2) ‘ashkii dine b-oo’í
 boy man PASS-see
 ‘The man sees the boy.’ Or ‘The boy is seen by the man.’

(3) ar’ééd nímasi yi-diiłid
 girl potato ACT-burn
 ‘The girl burnt the potato.’

(4) ar’ééd nímasi bi-diiłid
 girl potato PASS-burn
 ‘The potato burnt the girl.’

5. Pronoun systems

English. Personal pronouns

	SUBJ	OBJ
1st	I	me
2nd	you	You
3rd	he / she / it	him / here / it

6. Noun classes

Kinyarwanda Class 1 nouns (Whaley 1997: 176-7)

um-untu	‘person’
um-ukoobwa	‘girl’
um-ugore	‘woman’
um-ugabo	‘man’
um-waami	‘king’
um-ubaaji	‘carpenter’
um-uvoomyi	‘water carrier’

Exercise

Mixe (Whaley 1997: 170-1)

- (1) a. Tə paat ha həyuhk t-wopy. Human-animal
 PST Peter ART animal 3-hit
 ‘Peter hit the animal.’
- b. Tə paat ha hɔɔʔy t-wopy. Proper-common
 PST Peter ART person 3-hit
 ‘Peter hit the person.’
- c. Tə mehç ha hɔɔʔy t-wopy. 2.PRO-animate
 PST you ART person 2-hit
 ‘You hit the person.’
- d. Tə əhç ha hɔɔʔy t-wopy. 1.PRO-animate
 PST I/me ART person 1-hit
 ‘I hit the person.’
- e. Tə əhç ha mehç t-coky. 1.PRO-2.PRO
 PST I/me ART you 1-want
 ‘I wanted you.’
- (2) a. Tə paat ha həyuhk w-(y)opy-ə.
 PST Peter ART animal 3-hit-OBJ.higher
 ‘The animal hit Peter.’
- b. Tə paat ha hɔɔʔy w-(y)opy-ə.
 PST Peter ART person 3-hit-OBJ.higher
 ‘The man hit Peter.’
- c. Tə mehç ha hɔɔʔy m-wopy.
 PST you ART person 2-hit
 ‘The person hit you.’

d. Tə əhc ha hɔɔʔy t-wopy.

PST I/me ART person 1-hit

‘The person hit me.’

e. Tə əhc ha mehc t-coky.

PST I/me ART you 1-want

‘You want me.’

Markedness

William Croft. 1990. *Typology and Universals*. Cambridge: Cambridge University Press. Chap. 4

	SG	PL
English	car	car- s
Tartar	botak	botak- lar
Zulu	umu -ntu	aba -ntu
Minor Mlabri	ʔεεw	ʔεεw

	SG marked	SG unmarked
PL marked	+	+
PL unmarked		+

If a language uses an overt inflection for the singular, then it also uses an overt inflection for the plural.

Local markedness [markedness reversals]

SG	PL
car	car- s
pair of pants	pants

Table 1. Local markedness in Turkana (Croft 2003: 190)

	SG	PL
the Turkana (people)	ɲiturana-it	ɲiturana
wild animal	ɲityaŋ-it	ɲityaŋɪ
ear	ak-it	ɲaki
shoe	amuk-at	ɲamuk

Structural markedness

The marked value of a grammatical category will be expressed by at least as many morphemes as is the unmarked value of that category.
(Croft 2003: 92)

Table 1. Examples of structural markedness in English

	Marked	Unmarked
Number marking	car	car-s
Adjective comparison	big	big-ger / big-est
Grammatical relations	Peter	Peter's to Peter
Tense	walk	walk-ed will go
Aspect	walk	is walk-ing
Voice	kick	is / get kick-ed
Negation	happy have	un-happy don't have
Clause type	∅	that if / when / since

Problems: Fusion, suppletion and ablaut are difficult to analyze from the perspective of structural markedness.

Fusion: Spanish
 hable ‘I spoke’
 hablo ‘he spoke’
 habla ‘he speaks’

Suppletion: English
 go went
 be was
 bad worse
 good better

Behavioral markedness

Croft distinguishes between two types of behavioral markedness:

1. Inflection
2. Distribution

Inflectional behavior

<p>If the marked value has a certain number of formal distinctions in an inflectional paradigm, then the unmarked value will have at least as many formal distinctions in the same paradigm. (Croft 2003: 97)</p>

1. Gender, number, person distinctions in pronouns

	SG			PL		
	MASC	FEM	NEUT	MASC	FEM	NEUT
1st	I	I		we	we	
2nd	you	you		you	you	
3rd	he	she	it	they	they	they

- Number: 1st and 3rd person are unmarked relative to 2nd person
- Gender: 3rd SG is unmarked relative to 1st and 2nd SG
- Gender: 3rd SG is unmarked relative to 3rd plural

2. Case marking

	SUBJ	OBJ
3 rd person	he / she / it	him / her / it
Interrogative pronouns	who	who(m)
Demonstrative pronouns	that	that
Lexical nouns	car	car

3. Number marking

	SG	PL
3 rd person	he / she / it	they
Interrogative pronouns	who	who
Demonstrative pronouns	that	those
Relative pronouns	that	that
Lexical nouns	car	car-s

4. Subject-verb agreement

	Present	Past
1 st SG	walk	walked
2 nd SG	walk	walked
3 rd SG	walks	walked
1 st PL	walk	walked
2 nd PL	walk	walked
3 rd PL	walk	walked

5. Auxiliaries vs. main verbs

	<i>be</i>		<i>walk</i>	
	Present	Past	Present	Past
1 st SG	am	was	walk	walked
2 nd SG	are	were	walk	walked
3 rd SG	is	was	walks	walked
1 st PL	are	were	walk	walked
2 nd PL	are	were	walk	walked
3 rd PL	are	were	walk	walked

6. Case and number in Old English

Strong	SG	PL
NOM	stan	stan-as
GEN	stan-es	stan-a
DAT	stan-e	stan-um
ACC	stan	stan-as

7. Old English demonstratives

<i>that/the</i>	Masc	Neut	Fem	Plural
NOM	se	þæt	seo	þa
GEN	þæs	þæs	þære	þara
DAT	þæm	þæ:m	þæ:re	þæm
ACC	þone	þæt	þa	þa
INST	þy:	þy:		

8. Old English verbs

	Present	Past
Indicative		
1. Sg	sing-e	sang
2. Sg	sing-est	sung-e
3. Sg	sing-eð	sang
1. Pl.	sing-að	sung-on
2. PL	sing-að	sung-on
3. PL	sing-að	sung-on
Subjunctive		
1. Sg	sing-e	sung-e
2. Sg	sing-e	sung-e
3. PL	sing-e	sung-e
1. PL	sing-en	sung-en
2. PL	sing-en	sung-en
3. PL	sing-en	sung-en

Distributional behavior

If the marked value occurs in a certain number of distinct grammatical environments (i.e. construction types), then the unmarked value will also occur in at least those environments that the marked value occurs in. (Croft 2003: 98)

1. Active vs. passive

- (1) a. My sister kicked the ball.
b. The ball was kicked by my sister.
- (2) a. My sister likes bananas. psych verbs
b. *Bananas are liked by my sister.
- (3) a. Bill washed himself. reflexives
b. *Himself was washed by Bill.

2. Process vs. stative verbs

- (1) a. She played the piano.
b. She was playing the piano.
- (2) a. She liked bananas.
b. *She was liking bananas.

3. Main clauses vs. subordinate clauses

- (1) a. I met my old friend Peter **on the bus**.
b. **On the bus** I met my old friend Peter.
- (2) a. When I met my old friend Peter **on the bus**, we talked ...
b. *When **on the bus** I met my old friend Peter, ...

4. Personal pronouns vs. reflexive pronouns

- (1) a. **He** saw Mary.
- b. Mary saw **him**.
- (2) a. Peter saw **himself**.
- b. ***Himself** saw Peter.

Neutral value

1. The archiphoneme

- (1) a. Bund Bunde
- b. bunt bunte

2. 'man'

- (1) a. man and women
- b. mankind
- (2) a. dog (canine)
- b. dog (male dog) vs. bitch (female dog)

(3) gradable adjectives: old-young

- a. How old are you?
- b. *How young are you?

3. Gender

(1) English

the child/person. He ...

(2) Maasai (Croft 2003: 100)

Aiṅai na-ewno?

It.is.who who.FEM-has.come

‘Who has come?’

Explaining markedness patterns and the role of ‘frequency’

1. Structural markedness

The most frequent forms are expressed most economically, i.e. by the fewest number of morphemes. This principle is sometimes called Zipf’s law, after the linguist who popularized it:

High frequency is the cause of small magnitude. (Zipf 1935: 29)

Historically, the correlation between frequency and shortness/economy may arise in two ways:

1. Frequent forms tend to be pronounced less carefully than infrequent forms, and thus frequent forms are often shortened.

Airplane > Plane

Omnibus > bus

Going to > gonna

2. Infrequent forms often require an extra element to explicitly distinguish this form from the default.

Phone > cell phone

Mail > email

Er hat das Spiel gewonnen > Er hat das Spiel gewonnen gehabt.

ne > ne ... pas

2. Behavioral markedness

	Nominative	Accusative	Total
SG	42%	28%	70%
PL	18%	12%	30%
Total	60%	40%	100%

Distributional markedness and the neutral value do not seem to be motivated by frequency (or entrenchment, i.e. memory and ease of activation). Distributional markedness is motivated by semantic/conceptual factors:

1. That reflexives do not occur in subject position is semantically motivated.
2. That stative verbs do not occur in the progressive is semantically motivated.
3. That subordinate clauses do not allow for certain word order patterns is pragmatically motivated.

The neutral value may be phonetically motivated:

1. That obstruents are voiceless word finally is phonetically motivated: There is a natural tendency to devoice speech sounds at the end of a word.