A minimalist perspective on typology

Jan-Wouter Zwart
University of Groningen

CASTL Colloquium, Tromsø, February 2, 2006

1. Linguistic typology and dependency marking

(1) TYPOLOGY
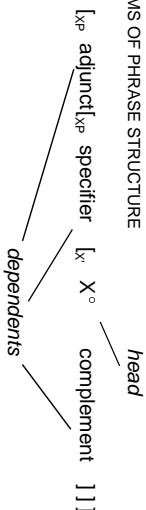The definition of linguistic types based on (large scale) comparison

(2) THEORETICAL BASIS
'Basic linguistic theory' (Dryer 2001): mainly traditional and common structuralist notions

(3) HEAD VS. DEPENDENT
"Linguists of divergent theoretical persuasions are in almost complete agreement as to what is the head and what is the non-head in a given construction [.]. Briefly, the head is the word which governs, or is subcategorized for—or otherwise determines the possibility of occurrence of—the other word. It determines the category of its phrase." (Nichols 1986:57)

(4) IN TERMS OF PHRASE STRUCTURE

$$[_{XP} \text{ adjunct } [_{XP} \text{ specifier } [_{X'} \text{ X}^\circ \text{ complement }]]]$$

head — X°
dependents — adjunct, specifier, complement

(5) SYNTACTIC RELATIONS
"They are binary, directed relations between a head and a dependent." (Nichols 1986:57)

(6) DEPENDENCY MARKING
"Syntactic relations can be morphologically marked either on the head of a constituent, or on the dependent."

(7) TYPES OF RELATIONS

CONSTRUCTION	HEAD	DEPENDENT
possessive	possessum	possessor
attributive	noun	adjective
adpositional	adposition	complement
clausal	verb	arguments

(8) *possessive*

	DEPENDENT	HEAD	
a.	**az** **ember** the man	**haz-a** house-3SG	Hungarian
	'the man's house'		
b.	**the** **man's** the man's house	**house**	English

(9) *attributive*

	DEPENDENT	HEAD	
a.	**wist** high 'tall house'	**t-citx°** REL-house	Shuswap
b.	**zelen-yj** green-NOM.MASC.SG 'green house'	**dom** house_{MASC}	Russian

(10) *adpositional*

	HEAD	DEPENDENT	
a.	**bez** without 'without brother'	**brat-a** brother-GEN	Russian
b.	**r-umaal** 3SG-by 'by Yaax'	**aa Yaax** CL Yaax	Tz'utujil

(11) *clausal*

a.

...........DEPENDENTS..............			HEAD	
a-xác'a the-man	**a-ph°ès** the-woman	**a-š°q'à** the-book	**ø-l-à-y-te-yt'** it-to.her-he-gave-FIN	Abkhaz

'The man gave the woman the book.'

b.

boku-ga 1SG-NOM	**tomodati-ni** friend-DAT	**hana-o** flower-OBJ	**ageta** gave	Japanese

'I gave my friend flowers.'

(12) GENERALIZATIONS (Nichols 1986)
a. 4 types: head-marking, dependent-marking, double marking, split marking
b. head-marking is default (languages tend to develop head-marking patterns)
c. dependent-marking is most common

2. Minimalist perspective

(13) SYNTACTIC RELATIONS ARE A FUNCTION OF MERGE
a. "We hypothesize that FLN [the faculty of language in the narrow sense, i.e. narrow syntax] includes recursion and it the only uniquely human component of the faculty of language." (Hauser, Chomsky, Fitch 2002:1569)
b. "Narrow syntax has one operation that comes 'free', in that it is required in some form for any recursive system: the operation Merge. (…) Any operation other than Merge requires empirical motivation, and is a deviation from SMT [the strong minimalist thesis]." (Chomsky 2001:4)
c. "(…) syntactic relations are established between a syntactic category X and a syntactic category Y when (and only when) X and Y are transformationally concatenated (thereby entering into sister relations with each other) by (…) Merge (…) during the tree-building, iterative, universal rule application that constitutes the derivation." (Epstein 1999:320)

(14) AFFECTS (5)
Syntactic relations are binary, directed relations between sisters.

(15) IT FOLLOWS THAT
The non-dependent may be a head or a phrase

(16) DEPENDENCY MARKING
Dependency relations may be marked on the dependent or on the non-dependent.

(17) THE BASIS OF DEPENDENCY
If   arguments are selected by a head (the verb),
and dependency relations need not involve heads,
then *selection* no longer provides the basis for dependency.

3. Other reasons for reconsidering head vs. dependent marking

3.1 Thematic roles vs grammatical functions

(18) NO CORRESPONDENCE THEMATIC ROLES—GRAMMATICAL FUNCTIONS
a. external argument becomes object: ECM (*I saw **him** kiss Mary*)
b. internal argument becomes subject: passive (***He** was arrested*)
c. object is formally dependent on higher verb: raising

Hij schijnt **haar** niet [te kennen —]

he seems her   not   to   know

(Dutch)

(19) JAKOBSON (1935) ON THE SUBJECT
The nominative does not mark any kind of dependency

3.2 Factors obscuring dependency marking

(20) 1. affix migration
      2. 'dependent head-marking'
      3. floating marking

Ad 1. Affix migration

(21) HEAD   DEPENDENT
a. kopkoffie   *no dependency marking*
b. cup of coffee   *dependent marking*
c. cuppa coffee   *head marking*

(22) the morphological marker may simply register the presence of syntactic dependency (Nichols 1986:58)

(23) LINKERS (IZAFET ELEMENTS): MARKING THE PRESENCE OF SYNTACTIC DEPENDENCY (Persian)
a. mard-e   pir   b. asb-e   pedar
    man-EZ   old   horse-EZ father
    'old man'   'father's horse'

(24) NO AUTO-AGREEMENT
[A] morphological affix may (...) index particular inflectional or lexical categories of either the head or the dependent, **marking them on the other constituent** (Nichols 1986:58)

(25) a. kur-ê   mezin   b. kec-a   baş   (Kurdish)
         boy$_{MASC}$-EZ:MASC.SG big   girl$_{FEM}$-EZ:FEM.SG   nice
         'the big boy'   'the nice girl'

(26) AFFIX MIGRATION
if any adposition or piece of affixal morphology moves, it will go from the dependent to the head, not vice versa (Nichols 1986:84)

(27) HEAD   DEPENDENT
cup   =a coffee   *dependent marking cum* cliticization
mard   =e pir

(Swahili)

Ad 2. Dependent head-marking

(28) HEAD   DEPENDENT
ki-ti   ch-a   m-ti
7-chair 7-LINK 3-wood
'wooden chair'

(29) N   [$_{AP}$ a   NP]
                    ↑
                    head-marking

head   dependent

(30) 'DEPENDENT HEAD-MARKING'
marking of a dependent on its head = dependent-marking

(31) SUBJECT-VERB AGREEMENT
dat   wij   in het bos   wandel-en   (Dutch)
that   1PL:NOM in the forest walk-PL
'that we are walking in the forest'

(32) ⟨ wij ⟶ ⟨ in het bos wandelen⟩⟩
                           ↑
                           head-marking

nondependent dependent

(33) OBJECTIVE CASE   (German)
ich liebe [d-en   Gartenzwerg]
I   love   the   garden gnome

(34) GENERALIZATION
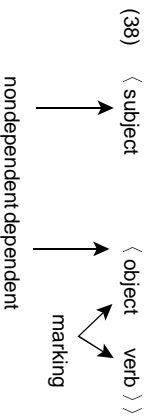dependent-marking is realized on a term of the dependent, typically the head

Ad 3. Floating agreement

(35) a. xinär-en   lavaš   u-ne-k-sa
         girl-ERG   bread:ABS eat-3SG-$-PRES
         'The girl EATS bread.'
         NB, $ designates the part of the stem following the clitic.

     b. xinär-en   lavaš-ne   uk-sa
         girl-ERG   bread:ABS-3SGeat-PRES
         'The girl eats BREAD.'

(36) realization of agreement is sensitive to focus (Schulze 2004)

(37) if (35b) is not head-marking, then neither is (35a)

(Udi)

(38) ⟨subject⟩ → ⟨object → verb⟩⟩
                              marking

nondependent dependent

(39) agreement is realized on a term of the predicate (not necessarily the verb)

(40)
i   cu   atavéa e?hó?h-i   no   cmói
REC.PAST 3SG COMPL.ASP finally tear off-LT SU:INVIS bear

na   sapci-si
OB:INVIS face-POSS

'The bear finally mauled his face.'   (Tsou)

3.3 The expression of dependency

(41) Dependency is   a. a *semantic* relation
which must be   b. *syntactically* realized,
can be   c. *morphologically* marked,
and   d. *phonologically* expressed.

e.g.   predication
        sisterhood
        by agreement
        via cliticization

(42) The relations   (((SEM → SYN) → MORPH) → PHON) need not be homomorphic

(43) DISTURBANCES
a. SEM → SYN   **movement**   [S]↔[V O] → V [S]↔[t O]
b. → MORPH   **dependent head-marking (20.2), floating agreement (20.3), multiple agreement**
c. → PHON   **affix migration (20.1)**

4. Reconsidering the basic types

4.1 Possessive dependency

(44) TWO BASIC TYPES (Heine 1997)
a. possessor = subject (*John's house*)
b. possessor = complement (*the house of John*)

(45) SUBJECT—POSSESSUM
a. fia   dadá
chief   mother
'the chief's mother'   [no marking]

b. fia   fé   xɔ
chief   POSS   house
'the chief's house'   [dependent-marking: linker]   (Ewe)

c. the chief's house
(< his house)   [dependent-marking: linker + affix migration]   (English)

d. à-čkʷʼan   yə-yʷnə̀
DEM-boy   his-house
'the boy's house'   [dependent-marking: dependent head-marking]   (Abkhaz)

(46)
a. POSSESSUM—COMPLEMENT
the house of the chief   [dependent-marking: linker]   (English)

b. xane   =ye   pedar
horse   EZ   father
'the horse of the father'   [dependent-marking: linker + affix migration]   (Persian)

(47) GENERALIZATION
Dependency marking on the *predicate* and on the *complement*

(48) EXCEPTIONS INVOLVE DOUBLE MARKING WITH GENITIVE CASE ON THE POSSESSOR
a. Ahmed-in   ev-i   (Turkish)
Ahmed-GEN   house-3SG
'Ahmed's house' (Heine 1997:148)

b. hwan-pa   wasi-n
John-GEN   house-3
'John's house' (Nichols 1976:72)   (Huallaga Quechua)

(49) EXCEPTIONS WITHOUT DOUBLE MARKING MAY SIMPLY INVOLVE FRONTING
u-paal   a'   winik-ej   (Itza)
3.ERG-child   DETman-TOP
'the child of the man' (Hofling 2000:257)

4.2 Adpositional dependency

(50) STANDARD CASES
a. bez   brat-a
without brother-GEN
'without a brother'   [dependent-marking: case]   (Russian)

b. out   of the house   [dependent-marking: linker]   (English)

(51) GENERALIZATION
The complement is marked

(52) CASES OF ADPOSITION MARKING
1. cliticization
2. relational noun construction (= possessive construction)

Ad 1. Cliticization

(53)
a. Waraka   hyaye
Waraka   from
'from Waraka.' (Derbyshire 1985:208)   [no marking]   (Hixkaryana)

b. ɨ-hyaye
3SG-from
'from him' (id.)

(54)
a. té-ma
3SG-for
'for him' (Radin 1929:126)   [no marking + cliticization]

b. polʔé-ma
boy-for
'for the boy' (id.)   [no marking + cliticization]

(Wappo)

Ad 2. Relational nouns

(55) SUBJECT—POSSESSUM
a. Laŋa Brumo   mo-pací
Langa Brumo   3SG-side
'with Langa Brumo' (Lorimer 1935:I, 132)   [dependent-marking: agreement]
(lit: Langa Brumo his side)

(Burushaski)

(56) EXCEPTIONS
a. hwan-pa   hana-n-chaw
John-GEN above-3-LOC
'above John' (Nichols 1986:72)

b. y-alam   t-a' winik-oo'-ej
3.ERG-below to-DET man-PL-TOP
'below the men' (Hofling 2000:328)

(Itza)

(Huallaga Quechua)

4.3 Attributive adjective constructions

(57) TWO TYPES
a. adjective = complement (izafet construction)
b. adjective = adjunct
   i. linker construction
   ii. adjective inflection

(58) IZAFET CONSTRUCTION
a. ki-ti   ch-a   m-ti
7-chair 7-LINK 3-wood
'wooden chair' (Ashton 1959:145)   [dependent-marking: linker]

(Swahili)

b. pir'tok   =o   find
book_MASC   EZ:MASC.SG   good
'good book' (Todd 1985:136)   [dependent-marking: linker, agreement + affix migration]

(Dimli)

(59) LINKER CONSTRUCTION: SUGGESTS ADJECTIVE = NONDEPENDENT
a. wist   t-citx°
high   REL-house
'tall house'   [dependent-marking: linker]

(Shushwap)

b. calay   a-monit
funny REL-man
'funny man'   [dependent-marking: linker]   (cf. *monit calay*)

(Mikir)

(60) ADJECTIVE INFLECTION
a. de oud-e   man
the old-DEF   man
'the old man'

(Dutch)

b. zelen-yj   dom
green-NOM.MASC.SG house_MASC
'the green house'

(Russian)

(61) ORIGIN OF ADJECTIVE INFLECTION FEATURES
a. outsider: dependent-marking (*case*)
b. determiner etc.: dependent-marking (*number, definiteness*)
c. noun: nondependent-marking (*gender*)

4.4 Conclusion

(62) UNMARKED DEPENDENCY MARKING
a. dependent over non-dependent
b. (within dependent category) head over non-head

5. The nature of case

5.1 Objective case as 'dependent dependent-marking'

(63) TRADITIONAL APPROACH
a. head-marking = agreement
b. dependent-marking = case

(64) DEPENDENT HEAD-MARKING
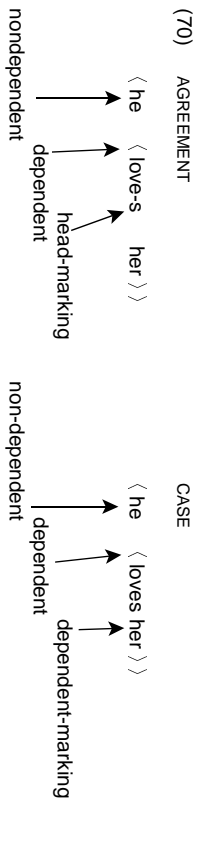Agreement is a subcase of dependent-marking (on the head of the dependent)

(65) JAKOBSON ON THE ACCUSATIVE (cf. (19))
a. The meaning of the accusative is so closely associated with the action, that it may only be governed by a verb (1935 [1966:57]) = **hauptbedeutung**
b. The accusative by itself signifies that some element is ranked higher than it on the hierarchy of clause meanings, i.e. it, unlike the nominative, conveys the existence of such a hierarchy (1935 [1966:60]) = **gesamtbedeutung**

(66) Accusative does not express dependency w.r.t. the verb but w.r.t. the subject.

(67) Morphological opposition NOM—ACC matches syntactic opposition SUBJECT—OBJECT

(68) DASR
There can be no direct relation between the subject and the object (no sisters)

(69) CONCLUSION
Objective case is dependency-marking on a non-head of the dependent

(70) AGREEMENT

⟨ he ⟨ love-s her ⟩⟩

nondependent → dependent

head-marking

CASE

⟨ he ⟨ loves her ⟩⟩

non-dependent → dependent

dependent-marking

5.2 Arguments

(71) 1. scrambling in Dutch
2. direct object mutation in Welsh
3. ergativity

Ad 1. Scrambling in Dutch

(72) ...dat hij **haar** nietschijnt [te kennen —]
that he:NOM she:ACC not seems to know:INF

(Zwart 2001)

(73) SOURCES OF OBJECTIVE CASE
a. embedded verb *kennen* 'know': no, *haar* moves to an A-position (Vanden Wyngaerd 1989)
b. matrix verb *schijnen* 'seem': no, unaccusative verb
c. some little v: no, little v in the matrix clause is either absent or defective
d. dependency marking of the sister of the subject *hij* 'he' on a term of the dependent

Ad 2. Direct object mutation in Welsh

(74) a. prynodd y ddynes **f**eic / *beic
bought the woman:DOM bike / bike
'the woman bought a bike'

b. roedd y ddynes yn prynu beic / *feic
was the woman:PROG buy:INF bike / DOM bike
'the woman was buying a bike'

(Welsh)

(75) NATURE OF THE MUTATION (Roberts 1997, Harlow 1989)
a. restricted to nouns and nominalized verbs (= case)
b. only triggered in the absence of a directly governing verb (= XP-triggered)

(76) Facts follow if case expresses a dependency, not w.r.t. the verb but w.r.t. the subject

Ad 3. Ergativity

(77) CONDITION FOR DEPENDENCY MARKING ON THE OBJECT
Accusative case as dependency marking device is only available where a morphological opposition exists between the structural cases nominative and accusative (cf. (67)).

(78) ERGATIVITY
transitive	subject:ERG	object:NOM	verb
intransitive	subject:NOM		verb

(79) Ergative is an inherent case (Woolford 1997, Nash 1996)

(80) When the subject is ergative, morphological case can no longer be used to realize dependency of the predicate w.r.t. the subject ⇒ object shows up in default case (absolutive/nominative).

(81) PREDICTIONS
1. dependency may still be expressed via subject-agreement
2. (all else equal) there should be no ergative agreement pattern

(82) SUBJECT-AGREEMENT WITH ERGATIVE CASE
a. ngaju ka-**rna** wangka-mi
1SG:ABS AUX:PRES-1SG:SU speak-NONPAST
'I am speaking.'

b. ngajulu-rlu ka-**rna**-ngku nyuntu nya-nyi
1SG:ERG AUX:PRES-1SG:SU-2OB 2:ABS see-NONPAST
'I see you.'

(Warlpiri)

(83) Woolford (2004): ergative agreement markers are clitics (so in fact, case-marked elements).

6. Conclusion

- Nondependent-marking is typologically rare.
- Head-marking (agreement) and dependent-marking (case) are two varieties of dependent-marking (in a subject—predicate dependency).
- Heads play no central role in dependency relations.
- If complements and predicates are prototypical dependents, we may hypothesize (84)

(84) Merge turns each current stage of a derivation into the dependent of the newly merged element.

Selected references

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: a life in language*. Michael Kenstowicza, ed., 1-52. Cambridge: MIT Press. ● Dryer, Matthew. 2001. What is basic linguistic theory? http://linguistics.buffalo.edu/people/faculty/dryer/dryer/blt ● Epstein, Samuel D. 1999. Un-principled syntax : the derivation of syntactic relations. In *Working minimalism*, Samuel David Epstein and Norbert Hornstein, eds., 317-345. Cambridge: MIT Press. ● Harlow, Steve. 1989. The syntax of Welsh soft mutation. *Natural Language and Linguistic Theory* 7, 289-316. ● Hauser, Marc D., Noam Chomsky, W. Tecumseh Fitch. 2002. The Faculty of Language: what is it, who has it, and how did it evolve? *Science* 298, 1569-1579. ● Heine, Bernd. 1997. *Possession: cognitive sources, forces, and grammaticalization*. Cambridge: Cambridge University Press. ● Jakobson, Roman. 1935. Beitrag zur allgemeinen Kasuslehre. In *Readings in Linguistics II*, Eric Hamp et al, eds., 51-89. Chicago: The University of Chicago Press (1966). ● Nash, Léa. 1996. *Portée argumentale et marquage casuel dans les langues SOV et dans les langues ergatives: l'example du géorgien*. Dissertation, Paris VIII. ● Roberts, Ian. 1997. The syntax of Direct Object Mutation in Welsh. *Canadian Journal of Linguistics* 42, 141-168. ● Schulze, Wolfgang. 2004. Review article of A.C. Harris, *Endoclitics and the origin of Udi morphosyntax* (Oxford 2002). *Studia Linguistica* 28, 419-441. ● Vanden Wyngaerd, Guido. 1989. Object shift as an A-movement rule. *MIT Working Papers in Linguistics* 11, 256-271. ● Woolford, Ellen. 1997. Four-way case systems: ergative, nominative, objective, and accusative. *Natural Language and Linguistic Theory* 15, 181-227. ● Woolford, Ellen. 2004. Case-agreement mismatches. To appear in *Agreement systems*, Cédric Boeckx, ed. Amsterdam: John Benjamins. ● Zwart, Jan-Wouter. 2001. Object shift with raising verbs. *Linguistic Inquiry* 32, 547-554.

Faculty of Arts, P.O. Box 716, NL-9700 AS Groningen, The Netherlands
c.j.w.zwart@rug.nl ● www.let.rug.nl/~zwart