

A typological perspective on minimalism

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Nano-syntax seminar, CASTL Tromsø, February 1, 2006

1. Introduction

- (1) **ASSUMPTION**
The computational system of human language (CHL) of the Faculty of Language involves a system generating structure = Merge (M).
- (2) **QUESTION**
What is the simplest form Merge could take?
- (3) Chomsky (2004): binary merge into unordered set
- (4) Chomsky (2005): merge of X and Y leaves X and Y unchanged (no tampering condition NTC)
- (5) "A more complex alternative, consistent with NTC, is that Merge forms the pair (X,Y). The underlying issue is whether linear order plays a role in narrow syntax [...] or whether it is restricted to the phonological component, motivated by interface conditions." (Chomsky 2005)
- (6) **TODAY**
Merge in its simplest form yields an ordered pair (X,Y), where Y is a dependent of X. Linear order /X,Y/ is a phonological realization of (X,Y).
- (7) **EMPIRICAL COMPONENT**
a) primitive syntactic objects are asymmetric (evidence: juxtapositions, coordinations)
b) syntactic dependencies are unidirectional sister-relations (evidence: reflexivity)
- (8) **TYPOLOGY**
study of linguistic variation across relatively large and representative samples of the world's languages
- (9) **CURRENT SAMPLE**
 - 215 languages, of which 180 analyzed (update from 164 language sample)
 - representing 71 of 97 unrelated families (remaining 26 families = 1.4% of the world's languages), plus 11 unclassified/isolated languages, creoles, and sign languages
 - sources: excellent published reference grammars

2. Asymmetric pairs

2.1 Stress as a function of structure

- (10) **PROSODY OF NAMES IN DUTCH** (Zwart 2003)
 - a. *phrase* hoge VEEN (high marsh)
 - b. *family name* HOOgeveen
 - c. *place name* hooGeeVEN

(11)

GENERAL PATTERN	phrase	name
met GOD	'with god'	(johnny)
vijf Eiken	'five oaks'	(wiljan van)
jonge VOS	'young fox'	(houthandel)
huis in het VELD	'house in the field'	(rex)
boter en BROOD	'butter and bread'	(helen)
blij Leven	'happily live'	(jeroen)
wel te VREden	'quite happy'	(henk)
meester BERends	'master Berends'	(herman)
		MEEsterberends
		(DegP)
		(CS)

(12) Germanic word stress is originally initial (Prokosch 1939:116)

(13) **PATTERN FOLLOWS IF**

- family names are taken to be 'atomic'
- place names are (sometimes) taken to be phrasal
- stress is a function of structure

(14) **NUCLEAR STRESS RULE** (Chomsky & Halle 1968, Cinque 1993, Zubizarreta 1998)

When X merges with Y yielding (X,Y), Y is prosodically marked

(15) **ALSO GENERAL PATTERN**

a. sports result	1-1	één-ÉÉN	
b. digit sequence	1, 2, 3	één-twee-DRIE	[one and twenty]
c. numbers	21	één-en-TWINTig	[half two]
d. the time	1:30	half TWEE	
e. the amount	2,50	twee-VIJftig	
f. reduplication	zozo	zo-ZO	
g. titles		luitenant-kolonEL	'so-so'
h. acronyms	PvdA	pévédeA	[socialist party]
i. coordinations		john and MARY	
j. asyndetons		me TARzan	
k. construct state		huis USHer	
k. predications		john loves MARY	[house (of) Usher]

(16) **SEMANTIC DEPENDENCY**

1-0 0 = a) the cardinality of zero, b) less than 1

PROSODY	CARDINALITY OF ZERO	LESS THAN 1
één-nul	✓	X
één-NUL	✓	✓

(17) Prosodic marking induces dependent reading

2.2 Coordination

(18) **SYMMETRIC ?** (Kehler 2000)

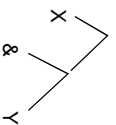
coordination	- parallel	- specifying	- consecutive
	- not parallel	- not specifying	- resultative

- (19) asymmetric coordination: second member is the dependent category
- (20) TYPOLOGICAL GENERALIZATION
Even with parallel coordination, the second member is invariably marked

- (21) TYPES OF MARKING
a) prosody
b) linking device (linker/head)

- (22) GENERALIZATION
A coordinating conjunction is invariably initial to the final member

- (23) KAYNE/MUNN ANALYSIS
Structure is head-initial (Kayne 1994, Munn 1993)



2.2.1 Quantitative analysis

- (24) Head-initial/final based on position of V and/or P w.r.t. their complement

	V AND P CLEAR		V OR P CLEAR		UNCLEAR
	CONVERGING	DIVERGING	V	P	
INITIAL	75	5	1	9	2
FINAL	58	1	5	14	7
TOTAL=164	133	6	23	9	9

- (25) In sum

	NUMBER OF LGS	PERCENTAGE OF TOTAL
HEAD-INITIAL	86	47.7
HEAD-FINAL	79	43.8
UNCLEAR/DIVERGING	15	8.3
TOTAL	180	100

- (26) Position of monosyndetic conjunction (n = noun phrase, c = clause)
- a. $A \& B = [A [\& B]]$ = INITIAL
b. $AB \& = [A [B \&]]$ = FINAL

	&N AND &C CLEAR		&N OR &C CLEAR		UNCLEAR
	CONVERGING	DIVERGING	&n	&c	
INITIAL	98	0	1	39	12
FINAL	2	1	0	10	0
TOTAL	100	1	49	12	46

NB1 some languages display more than one pattern
NB2 unclear = no data (20) + hard to classify, mostly polysyndetic (26)

- (27) In sum

	NUMBER OF LGS	PERCENTAGE OF TOTAL
&-INITIAL	149	82.7
&-FINAL	12	6.6
UNCLEAR/DIVERGING	46	25.5

NB the numbers don't add up because languages may display more than one pattern

- (28) Provisional conclusions:

- a. Final conjunctions are rare
b. Final clause conjunctions are exceedingly rare
c. If a conjunct is marked, it is the second conjunct
d. If the conjunct is marked by a head/linker, it precedes its complement

- (29) What about Latin?

- a. *senatus populus-que romanus* (common inscription)
senate people-and roman
'the Senate and the people of Rome'
- b. *ingenia fecunda totius-que naturae capacia* (Plinius, Nat. Q. 2, 190)
mind_{NTR}:PL prolific:NTR:PL entire:GEN-and nature:GEN able to grasp:NTR:PL
'minds that are prolific and able to grasp the entire universe'
- c. *obstantur per amicitiam sua antea fideliter acta*
beesecth:3PL by friendship through-and 3SG:POSS before loyally perform:PART:PERF
'they beg in the name of (their) friendship and their prior loyal behavior' (Salustius, Jug 71.5)

- (30) *-que* is a 'second position' initial conjunction

- (31) *2P initial conjunctions in the sample*

Amharic, Beila Coda, Evenki, Fon, Hausa, Kalasha-ala, Lezgian, Shipibo, Turkish, Wardaman, West-Greenlandic

- (32) *West Greenlandic, Eskimo-Aleut*

ippassaq tikip-put aqagu=lu ikinguta-at tiki:ssa-pukFortescue 1984:120
yesterday arrive-3PL:IND tomorrow=and friend their-PL arrive=FUT-3PL:IND
'They arrived yesterday and their friends will arrive tomorrow.'

- (33) *Turkish, Turkic: Altaic*
 Hasan iş-in-e git-ti Ali ev-in-e dön-dü
 H work-3SG-DAT go-PAST A house-3SG-DAT return-PAST
 ben-de park-ta kal-d-ım
 I-and park-LOC stay-PAST-1SG
 (Kortfilt 1997:109)

- (34) 'Hasan went to work, Ali returned home, and I stayed in the park.'
 'postpositive' conjunctions (**[A=8-B]**, Haspelmath 2000) invariably seem to involve cliticization,
 no evidence for head-final structure

2.2.2 Qualitative analysis

- (35) *Three types of noun phrase conjunction* (Mithun 1988, Stassen 2003, Haspelmath 2000)
 a. *and* coordination (conjunctive strategy)
 b. *with* coordination (comitative strategy)
 c. *also/they* coordination (summary strategy)

- (36) *Abun, West Papuan: comitative*
 Apner git sugit si' Fredik si' Musa
 Apner eat food with Fredik with Musa
 'Apner dined with Fredik and Musa.'
 (Berry & Berry 1999:97)

- (37) *Kalasha-ala, Nuristani: summary*
 zaga, isiti, şatmal di' sârot ?
 son wife cattle also healthy,
 'Are (your) son, wife, and cattle healthy?'
 (Degener 1998:161)

- (38) *Baule, Kwa: comitative + summary*
 wusi kpongbo ni' se be nü
 wash:IMP basin with pot 3PL inside
 'Wash the basins and pots.'
 (Timyan 1976:261)

- (39) *Elements used in the summary strategy:*
 a. copula (Hualapai, Koasati, Paumari, Warí)
 b. number expression or 'together' (Barasano, Daga, Enets, Kham, Kilivila, Koasati, Yukaghir)
 c. pronoun (Amele, Baram Kayan, Baule, Mapudungu, Shipibo)
 d. focus marker (Anu, Anharic, Baram Kayan, Barasano, Imbabura Quechua, Kalasha-ala, Kham, Kolarni, Pirahã, Retuarã, Shipibo, Slave, Trió, Warí, Western Desert Language)
 e. comitative marker (Hoava)

- (40) *Final & r: type of coordination strategy*

(shaded: using final conjunction only as a minor strategy, not scored in the tables)

LANGUAGE	AND	COMITATIVE	SUMMARY
Baram Kayan (Clayre & Cuditt 1974:72)			X
Barasano (Jones & Jones 1991:134)			X
Enets (Kumap 1999:39)			X
Hualapai (Walahomgie et al 1999:414)		(X)	X
Ika (Frank 1990:38)		X	
Imbabura Quichua (Cole 1982: 78, 80)			X

Jagaru (Hardmann 2000: 116)		X	
Kalasha-ala (Degener 1998:161,166)	X*		X
Kyayardid (Evans 1995:385)			X
Ket (Werner 1997:321)		X	
Kham (Watters 2002:198)			X
Kolyma Yukaghir (Maslova 2003:313,318)		X	
Kwaza (Van der Voort 2004:706)	X*		
Logbara (Crazzolara 1960:100)	X?	X	X
Navaho (Reichard 1974:322-323)		X	
Paumari (Chapman & Derhyshie 1991:189)			X
Pirahã (Everett 1986:225)			X
Retuarã (Strom 1992:39)			X
Slave (Rice 1989:1066)		X	X
Tariano (Alkhenvalid 2004:150)		X	
Trió (Carlin 2004:494)			X
Tubu (Lukas 1953:166)	X*		X
Warí (Everett & Kern 1997:164-165)			X
W Desert Language (Glass & Hackett 1970:66)		X	X
Yagua (Payne 1985)			X
Yaqui (Bedrick & Casad 1999:363)		X	X?

* also used as initial conjunction

- (41) *Kalasha-ala, Nuristani*
 a. e mesi ye e muša (productive) (Degener 1998:166)
 a woman and a man
 b. meši-moš-a-y (fixed expression) (Degener 1998:166)
 women-men-and
 'men and women'

- (42) *Logbara, Central Sudanic*
 à mu šri pie àku-a
 we go he and home-to
 'I went home with [sic] him.'
 (Crazzolara 1960:100)

NB, the inclusory effect (a plural pronoun used for a singular one under coordination) is almost exclusively found with the comitative strategy, suggesting *pie* is not simply 'and'.

- (43) *Tubu, Saharan (Kasirida dialect)*
 wüden arkó ye (Lukas 1953:166)
 gazelle goat and

NB, other dialects have *A ye B* or *A ye B ye*, which is also used in complex numerals.

(44) **Generalization**
No language in the sample uses final *and*-conjunctions exclusively

(45) **Idealization**
And-conjunctions are always initial

(46) Initial *and*-conjunction next to final comitative/summary conjunction:
a. *Kalesira-ala, Nurstanj* (37) vs. (41)

b. Ket
ema hisst-dlŋta ɔn' qɬ:n s'ɛ:n ha' qɔ:n duvi:n'
1PL.POSS forest?2-NOMWASC.SG.ADESS many elk-PL reindeer-PL and bear:PL live:3PL
'In our forest live many elks, reindeer and bears.'
(Werner 1997:321)

c. *Kolyŋma Yukaghjir*
tuda tarŋdjet odul-pe kereke-pul-n'ie tãñile erpeje-pul-n'ie
that:time CA Yukaghjir-PL Koryak-PL-COM and Even-PL-COM[=RECIP]
kimd'i-nun-ŋj' (Maslova 2003:319)
fight-HAB-3PL.INTR

'That is how Yukaghirs fought with Evens and Koryaks long ago.'
(47) Mithun (1988):

the comitative construction is "originally used to circumvent coordinate noun phrases", an elaboration of a more basic asyndetic construction which has a similar purpose. Mithun notes that "conjoined noun phrases are actually relatively rare in spontaneous discourse. (...) considerably rarer than conjoined clauses" (1988:337). The observation Mithun makes is that in narrative, distinct entities are preferably introduced by distinct information units, e.g. separate clauses, after which they can be referred to by plural pronouns. This suggests that juxtapositions/summary constructions and comitative constructions are not strictly speaking coordinations

2.2.3 The diachronic dimension

(48) Grammaticalization of comitative markers as conjunctions

pospositional languages (where COM = postposition)	68
of these, using comitative strategy	24
of these, comitative element becomes initial conjunction	16

(49) *Languages deriving initial conjunctions from postpositional comitative elements*

Burmese	Ket	Lavukaleve	Shipibo
Dogon	Kinnauri	Mikir	Slave
Haida	Kokborok	Navaho	Suppire
Japanese	Ladakh	Northern Qiang	Turkish

NB, three others (Arnele, Kobon, Meithe) have developed a bisyndetic coordination pattern, which also involves the introduction of an initial conjunction.

(50) *Japanese, Korean-Japanese*
a. Mary ga John to kekkoncita
Mary NOM John with married
'Mary married John.'

b. John to Mary ga kekkoncita
John with Mary NOM married
'John and Mary married.'

(51) *Kinnauri, Himalayish, Sino-Tibetan*
a. en ran do: chan due
1SG:GEN with 3SG:GEN son be:3PAST
'His son was with me.'

b. ga ran ki bi-tiʃ
1SG:DIR and you:HON go-FUT:1DU.INCL.HON
'I and you will go.'

(52) *Kokborok, Jingpho-Koryak-Bodo, Sino-Tibetan*
a. ram bi-bi-day phay-anu
Ram his-elder:sister-with come-will
'Ram will come with his elder sister.'

b. bo-day beta bajan-c thang-c
3HUM-and his-elder:brother market-to go-PRES
'He and his elder brother are going to the market.'

(53) *Northern Qiang, Sino-Tibetan*
a. qɔ khumtsi-ŋɔ tɔntse-ka ka:
1SG Khumtsi-COM store-LOC go:PROSP:1SG
'I am going to the store with Khumtsi.'

b. mutsitsu-ŋɔ-tugantsu zepəɔ-to fo-lu-ɔ:-ji
Mutsitsu-COM-Tugantsu earth-LOC DIR-come-PROSP-CHST
'Mutsitsu and Tugantsu wanted to come to earth.'
NB, PROSP = prospective aspect, CHST = change of state marker

(54) *Mikir, Sino-Tibetan*
a. la-pen na corapnon
3SG-ASS 2SG eat
'You eat with him.'

b. notbuk, kitap pen pencil
notebook book and pencil
(Jeyapaul 1987:135)

(55) *Lavukaleve, East Papuan, Indo-Pacific*
a. ma-mita'keu-mal va vo-ne
3PL.POSS-dog-PL PL.DEF 3PL-with
'with their dogs'

b. airal mimma e-ma-re vo-mal nala
man:DU way of life:NTR 3SG.NTR-OB-take-INF come-DU MASC.DU.DEF
finala Sepo ne Laumate
3DU.MASC.FOC MASC and MASC
(Terrill 2003:160)

'The two men who brought the church were Sepo and Laumate.'

- (56) *Slave, Athabaskan, Na-Dene*
 a. ɬiyɛ bee hé taftɬwee
 meat knife with 2SG:cut
 'You cut the meat with the knife.'
 (Rice 1989:1073)
- b. hɲii tsá hé tɛk'k'ai kwik'ii t'áh kageniwe
 past beaver with muskrat gun with 3PL:hunted
 'In the past, people hunted beaver and muskrat with guns.'
 (Rice 1989:1067)
- (57) *Haïda, Na-Dene*
 a. kilrad-ʔad xàaydas-ʔad tiling xàaydaray-ʔad hlnagid
 Tsimshians-with Haïdas-with Bellabellas-with Tlingits
 gud-ʔilaa gina-ra suu-s-ii
 REC-different thing-PP sing-PR-TC
 (Skidegate; Enrico 2003:1080)
- b. 'Tsimshians and Haïdas and Bellabellas and Tlingits were singing different songs.'
 kya.a.n q'aal-gee-ra/i taaw-ee-ʔisan 'la gya.alati'a-a-gan
 can empty-DF-with food-DF-too 3PL bring-PA
 'She brought the empty cans and the food.'
 (Masset; Enrico 2003:1081)
- (58) *Turkish, Turkic, Altaic*
 a. Hasan Ali-yie opera-ya git-ti-^o
 H A-with opera-DAT go-PAST-3SG
 'Hasan went to the opera with Ali.'
 (Korntli 1997:115)
- b. Ali-yie Zeynep dün sinema-ya git-ti-ler
 A-with Z yesterday cinema-DAT go-PAST-3PL
 'Ali and Zeynep went to the cinema yesterday.'
 (Korntli 1997:114)
- Other final elements developing into initial conjunctions*
- **focus markers**
- (59) *Lezgian, Northeast Caucasian*
 a. Zun-*ni* q'ũre-na
 1sg:abs-also smile-AOR
 'I also smiled.'
 (Haspelmath 1993:328)
- b. Isa-di-*ni* Ali-di sada-sada-w ǰil-er wuga-na
 Isa-ERG-CONJ Ali-ERG one-one-ADRESS hand-PL give-AOR
 'Isa and Ali shook hands.'
 (Haspelmath 1993:327)
- (60) *Kayardildj, Pama-Nyungan, Australian*
 a. ngada ban
 1SG.NOM too
 (Evans 1995:395)
- b. rya-thi nga-r-r-a banga-y kabathaa-th bana banga-a bana banga-a
 east-REM 1-DU-NOM turtle-MLOC catch-ACT and turtle-NOM and turtle-NOM and turtle-NOM
 'Way in the east we two caught turtles and turtles and turtles and turtles.'
 (Evans 1995:394)

^{MLOC} = modal locative case, expressing 'instantiated' modality

- (61) *Monguor*
 a. mori nige da uguã
 horse one also not exist
 'There is not a single horse.'
 (De Smet & Mostaert 1964:51)
- b. mori da rdžigeni xulõx
 horse and donkey hitch up
 'Hitch up the horse and the donkey.'
 (De Smet & Mostaert 1964:163)
- **Noncomitative postpositions**
- (62) *Ainu, Korean-Japanese*
 a. nupuri ka wa hotuyra
 hills top-of from call.in.loud voice
 'Someone called in a loud voice from the top of the mountain.'
 (Tamura 2000:133)
- b. otcike huraye wa pilpa
 tray wash and wipe
 'Wash and wipe the tray.'
 (Tamura 2000:149)
- **Suffixes**
- (63) *Arabic, Semitic, Afro-Asiatic*
 ka-gabäya çäw-anna babäre amaita^{wh}
 from-market salt-and pepper lbrought
 'I brought salt and pepper from the market.'
 (Leslau 2002:154)
- (64) *Tauya, Adelbert Range, Indo-Pacific*
 fei-ʔ ya-tu-a-ʔa
 boil-CONJ 1SG-give-3SG-IND
 'She cooked it and gave it to me.'
 (MacDonald 1990:247)
- (65) *Kiowa, Tanoan*
 a. bá:í: ^o-né-dá: gó mi: ^o-né-p'óy
 cat 2/3SG.AG-1SG.PAT:DU.OB-be and:SS almost 2/3SG.AG-1SG.PAT:DU.OB-lose:PERF
 'They are my cats and I almost lost them.'
 (Watkins 1980:293)
- b. ǰipál sɛp ^o-cándé-ǰ: nó páhí: bá-t'ǰ:ǰády
 closer rain 3SG-arrive-coming and:ds clearly 2PL-get wet:PERF
 'The rain is getting closer and it's obvious that we'll get wet.'
 (Watkins 1980:272)
- c. má:yi gó k'ýǰá:nǰ:
 woman and man
 (Watkins 1980:288)
- **Verbs**
- (66) *Suppire, North Central/Niger-Congo, Niger-Kordofanian*
 a. Uru na η-káǰé sá ú kaci'iyí bára Bámberne wuyi
 he:EMPH PROG INTR-go:IMPF go his bones:DEF add Baberna POSS:DEF(USG)
 na Sogo Kanha na
 on Sikasso town at
 (Carlson 1994:267)
- b. 'He was going to go add his bones to Babernba's in Sikasso.'
 Mu bárá mi na wúú sí η-kàré Sukwoo na
 you add me on we FUT FUT-go Sikasso at
 'You and I, we will go to Sikasso.'
 (Carlson 1994:268)

2.2.4 Other cases of head-final languages using initial conjunctions

- (67) *Kolyma Yukaghir, Uralic-Yukaghir*
palpe *tāhlie* mémé
woman CA bear
'The woman and the bear.'
(Maslova 2003:318)
- (68) *Kabardian, West Caucasian*
p *Sə-k'wə-z*
ten-plus-one
'eleven'
(Colarusso 1992: 159)
- (69) *Logbara, Central/Sudanic, Nilo-Saharan*
mòdri *dí-ní* áib
ten on-it one
'eleven'
(Crazzolara 1960:38)
- (70) *Mao Naga, Kuki-Chin-Naga, Sino-Tibetan*
okhro kaxi *yé* khochu kali
dao two and gun one
'two daos and a gun'
(Giridhar 1994:454)
- (71) *Central Asmat, Trans New Guinea, Indo-Pacific*
Juwur *enehím* Ew
dog and crocodile
[story title]
(Voorhoeve 1965:172)
- (72) *Canela, Ge-Pano-Carib*
capi *mé* kryt ma tē
Capi and Kryt away go
'Capi and Kryt go away.'
(Popjes & Popjes 1986:150)
- (73) *Basque, isolate*
lagun *eta* ahaide-*ei* agur *egin*
friend and relative-P.L.DAT salute make-*PERF* 3ABS-PRES:AUX2-3P.L.DAT-3SG:ERG
'He has greeted his friends and family.'
(Saltarelli 1988:90)
- (74) *Ket, isolate: (46b)*
- (75) *Daga, Trans New-Guinea, Indo-Pacific*
wata *ge* manapawa
yesterday and day before yesterday
'yesterday and the day before yesterday'
(Murane 1974:95)
- Conjunctions borrowed into head-final languages*
- (76) *Djingili, Australian*
ngarquli *an* nuliambirgari
Tommy and Ned
an < English and
(Chadwick 1975:97)
- (77) *Lazgian, Northeast Caucasian*
güzeli *wa* čexi šeber
beautiful CONJ big city
'a beautiful and big city'
wa < Turkish < Arabic *wa*
(Haspelmath 1993:330)

- (78) *Turkish, Turkic, Altaic*
sen *ve* ben
you and I
ve < Arabic *wa*
(Lewis 1986:206)

(79) *Generalization*
Borrowed conjunctions are invariably initial

2.2.5 Bisyndetic conjunction

- (80) *Annele, Madang, Indo-Pacific*
Barag *ca* Bunag *ca* ale *bele-si-a*
B add B add 3DU dance go-3DU-HOD.PAST
'Barag and Bunag have gone to the dance.'
(Roberts 1987:105)
- (81) *Generalization*
If there is an unmarked monosyndetic counterpart to bisyndetic conjunction, it is initial.
- (82) *Marrind, Trans New-Guinea, Indo-Pacific*
nok *namək a* nok *namük a*
1SG brother and 1SG sister and
'my brother and my sister'
(Drabbe 1955:135)
- b. *inah a* *izakod*
two and one
'three'
(Drabbe 1955:26)
- (83) *Daga, Trans New-Guinea, Indo-Pacific: Involving summary strategy*
nenip *Bure ge* nenip *Dukukik tere*
bird Bure and bird Dukukik two
'the Bure bird and the Dukukik bird'
(Murane 1974:94)

- b. *wata ge* manapawa
yesterday and day before yesterday
'yesterday and the day before yesterday'
(Murane 1974:95)

2.2.6 Conclusion

- (84) a. *and*-conjunctions are universally initial
b. there appears to be a universal developmental path from final comitative and summary elements to initial conjunctions
c. borrowed conjunctions are universally initial
d. where polysyndetic conjunction has an unmarked monosyndetic counterpart, it is always of the initial type

(85) In the domain of coordination, head-final languages have a strong preference for head-initial structure

2.3 Functional heads

- (86) INITIAL GENERALIZATIONS (Zwart 2006):
a. If a language has both pre- and postpositions, and it has a general, all-purpose adposition *p*, *p* is invariably a preposition (e.g. Mende, Migged 1908:111).
b. If a language has circumpositions consisting of a lexical and a functional adposition, the functional element is a preposition (e.g. Tikar, Stanley 1991:345; Zay, Meyer 2005:274).
c. Functional adpositions occupying unexpected positions are always prepositions (e.g. Eastern Kayah Li, Sohlt 1997:209).

(87) STRONG TENDENCY
If a language has a relational noun construction which requires or allows support from a functional adposition, the latter is prepositional.

(88) *Zay, South Semitic*

a. *be-gār* der P-house surface 'on the house' b. *be-wābūt* *ʔarci* P-giving back 'after the giving'

c. *be-wūt* P-3SG.MASC support *ʔammākəynet* 'thanks to him' (Meyer 2005:274-275)

(89) *Kham, Tibetic-Burman*

a. *o-lap-ke* its-side-at 'beside it' b. *ŋa-ŋah-ke* my-front-at 'in front of me' (Walters 2002:137)

c. *o-sora-te* its-line-on 'in line with it' d. *o-ŋah-te* its-front-on 'ahead of it (in a line)'

3. Grammatical dependency

(90) DERIVATIONAL APPROACH TO SYNTACTIC RELATIONS (DASR) (Epstein et al. 1998)
Grammatical relations are established only between elements that merge (and only at the point in the derivation where they merge)

(91) HYPOTHESIS (Zwart 1993)
Grammatical relations are sisterhood relations

Why should (90)/(91) hold?

(92) GENERALIZATION
Grammatical relations are dependency relations

DASR follows if dependency is a function of merge

3.1 Binding

(93) Two major points (i) binding should be an automatic result of merger
(ii) this implies that anaphoricity is an acquired feature

(94) a) pronominals enter the derivation as PRON
b) in the course of the derivation, PRON may acquire a feature [REFLEXIVE]
c) at Spell-Out (**morphology after syntax**), a conversion takes place from syntactic features to morphological forms
d) depending on the morphological paradigms, PRON may be realized differently with or without the feature [REFLEXIVE]

3.1.2 Early attempt

(95) implementation of Zwart (2002):



b. [NP V [PRON]] \rightarrow PRON realizes as *him* (default)

(96) a. Nothing forces a language to have a special realization of reflexive PRON (97)
b. Nothing excludes multiple sources for a particular realization of PRON (98)

(97) a. Marie skammet har \rightarrow PRON realized as *har* (reflexive) (Frisian)
Marie shames her
'Marie is ashamed.'

b. Marie hearde har \rightarrow PRON realized as *har* (default)
Marie heard her
'Marie heard her/herself.'

(98) a. John himself presented the award (emphatic)
b. John thought that pictures of himself would be on sale (logophoric?)

(99) Binding now: (i) conditions for acquisition of reflexive feature \rightarrow sisterhood
(ii) realization of reflexive feature \rightarrow morphology at Spell-Out

(100) What the approach explains immediately (cf. Kayne 2002):

a. c-command (sisterhood)
b. Principle B/C (no reflexivity, no anaphor)
c. locality (movement in (95a) is A-movement)
d. uniqueness (binary branching)

3.1.2 Problems

(101) (i) paradoxes (102)
(ii) the status of SE-reflexives (103)-(104)
(iii) typological observations (105)

(102) a. John [was arrested —] by himself
b. John seems to himself [— to be an idiot]

(103) *slight meaning differences* (cf. Rooryck & Van den Wyngaerd 1998)
a. Jan hoorde zich ('op de radio) zingen (Dutch)
John heard SE on the radio sing
John heard SE on the radio sing
'John heard himself sing.'

b. Jan hoorde zich-zelf (op de radio) zingen
John heard SE-SELF on the radio sing
'John heard himself sing on the radio.'

(104) *nonthematic SE* (German)
Das Buch liest sich gut
the book reads SE good
'The book reads well.'

(105) Reflexivity does not have to involve pronominals (cf. Baker 1996)

3.1.3 Typological survey (cf. Geniušienė 1987, Schladt 2000)

- (106) *Expression of reflexivity:*
- | | |
|--------------------------------|------------------------------|
| a. object pronoun (107) | g. secondary predicate (113) |
| b. object clitic (108) | h. intensifier (114) |
| c. nonthematic clitic (109) | i. adverb (115) |
| d. verbal morphology (110) | j. special auxiliary (116) |
| e. body-part noun phrase (111) | k. locative PP (117) |
| f. self noun phrase (112) | l. other object NP (118) |
- (107) *pronoun*
- | | |
|---|-----------|
| a. John saw himself | (English) |
| b. bulen me:mi va:-re-n
enemy oneself Kill-NFUT-3SG
'The enemy killed himself.' (Nedjalkov 1997:109) | (Evenki) |
- (108) *clitic*
- | | |
|---|---------------|
| a. Nrà dreghe-nrĩ fadre rroto
3SG.SU injure-3SG.OB with car
'He injured himself in a car.' (Osuni 1995:207) | (Tiri) |
| b. Kot dziare-cca
cat scratch-REFL
'The cat scratches.' (Geniušienė 1987:249) | (Belorussian) |
- (109) *nonthematic reflexive*
- | | |
|---|--------------|
| a. Das Buch lest sich gut
the book reads SE good
'The book reads well.' | (German) |
| b. Jon-as at-si-vedė vaik-ą i mokykl-ą
Jonas-NOM PER-REFL-brought child-ACC to school-ACC
'Jonas brought the child with him to school.' (Geniušienė 1987:135) | (Lithuanian) |
- (110) *verbal morphology*
- | | |
|--|-----------|
| a. Sak ra- lajate -nuhve-s
Sak MASC.SG.SU-REFL-like-HAB
'Sak likes himself.' (Baker 1996:50) | (Mohawk) |
| b. Juma a-li- ji -pend-a
Juma, 1-PAST-REFL-love-FV
'Juma loved himself.' (Hoeksra & Dirrindaal 1983:69) | (Swahili) |
| c. sañ- si -ke
Kill-DETRANS-PERF
'He killed himself.' (Watters 2002:242) | (Kham) |
- (111) *body (part) NP*
- | | |
|--|--------------|
| a. Nye reren mtogon
he kill body
'He kills himself.' (Spagnolo 1933:139f in Schladt 2000) | (Bari) |
| b. en toof-ii koye men
we harm-ASP heads our
'We have harmed ourselves.' (Sylla 1993:149) | (Toucouleur) |

- (112) *self object NP*
- | | |
|---|-----------|
| a. Abono-ra na-noki-a-'a-ha
self-OBJ CAUS-see-DETRANS-ASP-THEME
'He sees himself.' (Chapman and Derbyshire 1991:178 in Schladt 2000) | (Paumotu) |
| b. Afñiadi-z wič güzgüd-a akwa-zwa
Afñia-DAT self mirror-INESS see-IMPF
'Afñia sees herself in the mirror.' (Haspelmath 1993:185) | (Lezgian) |
- (113) *secondary predicate*
- | | |
|---|------------|
| Irail pein duhp-irail
3PL self bathe-3PL
'They bathed themselves.' (Rehg 1981:301) | (Pongpean) |
|---|------------|
- (114) *intensifier*
- | | |
|---|-------|
| ʔut geɟ-e-ni geɟ
3SG.MASC REFL-ACC-POSS:3SG.MASC Kill:PERF:3SG.MASC
'He killed himself.' (Meyer 2005:84) | (Zay) |
|---|-------|
- (115) *adverb*
- | | |
|---|----------|
| Atakusa a-nö kama nia sapa ko-pa-so-ma
gun 3SG-INST 3SG shoot reverse:DIR return-EXT-FOC-COMPL
'He shot himself with a gun.' (Borgman 1991:43 in Schladt 2000) | (Sanuma) |
|---|----------|
- (116) *special auxiliary*
- | | |
|--|-------|
| Yehpe nochi
Y-ehpe n-ocoh-i
3SG:DI:STPAST-do.reflexively NOM-see-OB:3SG
'He/she saw him/herself.' (Crowley 1998:127) | (Sie) |
|--|-------|
- (117) *locative*
- | | |
|---|---------|
| Mi-[m] ti-ré
I-kill on-me
'I kill myself.' (Tucker & Bryan 1966:150 in Schladt 2000) | (Zande) |
|---|---------|
- (118) *other NP*
- | | |
|--|-----------|
| Jussi naki ise-nsä
Jussi:NOM see:PAST reflection-3SG.POSS
'Jussi saw himself.' (Faltz 1985:137 in Schladt 2000) | (Finnish) |
|--|-----------|
- 3.2 Adapting the analysis**
- (119) GENERALIZATION
If the antecedent is the subject, reflexivity is expressed on a term of the subject's sister.
- (120) [SUBJECT John] → [PREDICATE loves PRON]_{REFLEXIVE}
- (121) If α merges with β , β is the dependent of α (**asymmetric merger**)
- (122) Parallel with subject-verb agreement, realized
- | |
|----------------------------------|
| (i) on the verb/auxiliary |
| (ii) on auxiliary + verb |
| (iii) on separate pronoun/clitic |
| (iv) on the object (i) |
- 3.3 Dependency realization**
- (123) Which term of a dependent element D expresses the relevant feature of D?

- (124) Typical cases: a. agreement: realization on the head of D (**head-marking**)
 b. case: realization on a noun phrase in D (**NP-marking**)
- (125) Typological survey: reflexivity can be expressed in both ways
- (126) Polysynthetic languages: strong preference for (perhaps uniquely) head-marking
 (i) full agreement
 (ii) no structural case (Baker 1996:132)
- (127) BAKER'S GENERALIZATION (Baker 1996:49)
 Polysynthetic languages lack NP anaphors (in object position)
- (128) Baker's generalization reflects a realization preference: polysynthetic languages mark dependencies on the head of the dependent.
- (129) exceptions predicted, and found
- a. ʔlɛg-e čənet-ete goranə tem-nən
 father-ERG self-DAT reindeer slaughter-3SG.SU/3SG.OB
 'The father slaughtered a reindeer for himself.' (Nedjalkov 1997:196,201 in Baker 1996) (Chukchee)
- b. ʔlɛg-e čɪnit-kin uwik wiriŋe-kə-nin
 father-ERG self-POSS body defend-PRES-3SG.SU/3SG.OB
 'The father defends himself.' (Nedjalkov 1997:190,201 in Baker 1996)
- c. mukke ʔay golpyancekəy win ʔay-win
 fall-COMPL 3ERG-hit-do-COMPL 3ERG-REFL
 'He falls and he hurts himself.' (Johnson 2000:107) (Chimalapa Zoque)
- 3.4 What remains of the binding theory?**
- (130) GENERALIZATION
 Binding is a subclass of sister-orientation (in a subject-predicate dependency)
- (131) core case: subject is immediately affected by the action expressed by the predicate ('AGENS = PATIENS')
 (i) predicate is detransitivized (verbal morphology, reflexive cliticization)
 (ii) predicate contains a variable element (PRON, body part NP, etc.)
 (iii) predicate contains some other device signaling orientation (adverb, secondary predicate, etc.)
- (132) additional cases: subject indirectly affected by the action expressed by the predicate ('AGENS = BENEFICIARY', AGENS is otherwise involved)
 (iv) dative reflexives (133)
 (v) nonthematic reflexives (Lithuanian (109b))
- (133) Juan se construyó una casa casa
 John REFL built a house house
 'John built himself a house.' (Spanish)

- (134) BINDING THEORY?
 a. c-command (< sisterhood)
 b. uniqueness (< binary branching)
 c. Principle C: R-expressions are not PRON, so they cannot realize the feature 'sister-orientation' (unless they contain an open place, as in body part NPs)
 d. Locality: a sister-oriented predicate cannot realize the sister-orientation feature on a term of an embedded clause (the NP-object realization strategy requires that the object of the predicate itself realize the dependency, to get an interpretation where the subject is affected by the action)
- (135) Binding theory is not about determining the distribution of a given set of pronominal elements, but about the realization of reflexivity on a term of a dependent category
- 4. Simplest Merge**
- (136) *What we need for a (bottom-up) derivation*
 a. a numeration of elements to be merged (RESOURCE)
 b. a process of merger (MERGE)
 c. a WORK SPACE containing the output of MERGE (a subset of the RESOURCE)
- (137) Bobaljik 1995: merger = establishment of a link between two members of the numeration
- (138) *Proposed mechanism (MERGE): assign one element from the RESOURCE to the WORK SPACE*
- (139) a. John loves Mary
 b. 1. NUMERATION: John, loves, TENSE, Mary, {WORK SPACE: ∅ }
 assign Mary to the WORK SPACE
 2. NUMERATION: John, loves, TENSE, Mary, {WORK SPACE: Mary }
 assign loves to the WORK SPACE
 3. NUMERATION: John, love, TENSE, Mary, {WORK SPACE: Mary, loves+Mary }
 assign TENSE to the WORK SPACE
 4. NUMERATION: John, love, TENSE, Mary, {WORK SPACE: Mary, loves+Mary, TENSE+loves+Mary }
 assign John to the WORK SPACE
 5. NUMERATION: John, love, TENSE, Mary, {WORK SPACE: Mary, loves+Mary, TENSE+loves+Mary, John+TENSE+loves+Mary }
- (140) ASYMMETRY
 At every point in the derivation, there is an asymmetry between a) the elements already in the WORK SPACE and b) the element newly assigned to the WORK SPACE (cf. also Jaspers 1998)
- (141) simplest merge yields an ordered pair
- 5. Locality**
- (142) no tampering condition (4): movement is not extraction but remerge
- (143) a. Mary, John loves

- b. 1-5 as in (139b)
- assign Mary to the WORK SPACE
6. NUMERATION: *John, love, TENSE, Mary, {WORK SPACE: Mary, loves+Mary, TENSE+loves+Mary, John+TENSE+loves+Mary, Mary+John+Tense+loves+Mary}*
- (144) Movement (remerge) can only involve elements in the NUMERATION (incl. WORK SPACE)
- (145) The NUMERATION may include phrases = output of previous AUXILIARY DERIVATION
- (146) PROPOSAL
The NUMERATION may include anything: morphemes, words, phrases (cf. DiSciullo/Williams 1987, Ackema/Neelerman 2000)
- (147) a. *morpheme + word* werk-er 'worker'
work-AG
- b. *morpheme + phrase* dat ge-[wat gaan we doen]
that GE what go:PL we do:INF
'that constantly asking 'what shall we do''
- [ban de bom]-er
ban the bomb-AG
'person involved in anti-bomb activities'
- [kat uit de boom kijkt]-er- (ig/ji)
cat out the tree look AG ADJ/N
'(property/behavior of) person being hesitant, expectant'
- c. *N + phrase compound* [doe dat nou niet]-houding
do that prt not attitude
'attitude of advising caution'
- d. *phrase as word* [manus-je van alles] 'factorium'
<name>-DIM of everything
- (148) Separation in current and previous (auxiliary) derivation such that members of N of a previous derivation are not in N of the current derivation (cf. the concept of 'process' in Toyoshima 1997)
- (149) a. Hij is een [manusje van alles]
he is a factorium
- b. * Van alles is hij een manusje
c. * Overal is hij een manusje van
d. * Een manusje echter van alles is hij niet (echter = however)
- (150) a. NUMERATION: *hij, is, een, [manusje van alles]*
b. not: *hij, is, een, manusje, van, alles*
- (151) HYPOTHESIS
Opaque domains are outputs of previous derivations

- (152) a. derives Lexical Integrity
b. derives CED (Condition on Extraction Domains, Huang 1982; cf. Toyoshima 1997)
c. possibly derives CSC (Coordinate Structure Constraint, Ross 1967)
- (153) a. * It's the CAR that [the driver of —] caused a scandal (merged as specifier)
b. It's the CAR that [the driver of —] was arrested (merged as complement)
(Chomsky 2005)

6. The Linear Correspondence Axiom

(154) $\langle X, Y \rangle \equiv \langle X, Y \rangle$

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