

The Linguistic Cycle
 Elly van Gelderen
 Arizona State University
ellyvangelderren@asu.edu

Principles of Universal Grammar, including Economy Principles, help a child acquire his or her (internalized) grammar. These same Principles determine language change (and language evolution), in particular the change that's been called grammaticalization. Grammaticalization is a factor in the Linguistic Cycle, examples of which I will give below, but not the only one. Language-external factors also play a role.

1 Minimalism and Change


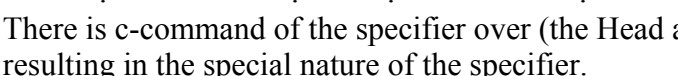
1.1 Linguistic Change

All variation is in the lexicon: syntax is inert.
 Feature loss is responsible for certain grammaticalizations.
 UG principles are come in two kinds: absolute and cue-based.
 Economy Principles set the default; question of the cues.
 Internal (Principles) and external factors account for the Linguistic Cycle.

1.2 Merge

Basic derivation: Lexicon, selection, merge, move (=internal merge), and agree;
 Interpretation at LF + PF. Merge is 'put two linguistic entities together':

(1) **Principles connected with Merge**

- a. Merge involves projection, hence headedness, specifiers, and complements
- b. The binary character of Merge results in either:
 - (i) 
 - (ii) 
- c. There is c-command of the specifier over (the Head and) the Complement, resulting in the special nature of the specifier.

Merge is the "'Great Leap Forward' in the evolution of humans" (Chomsky 2005: 11). A slight rewiring of the brain might have made the operation Merge possible and, in its turn, Merge made syntax possible by combining words into multiple unit expressions, with in principle infinite recursion. Syntax was "inserted into already existing external systems", namely the sensory-motor system and system of thought (Chomsky 2002: 108).

1.3 Three layers: thematic, grammatical, discourse-related

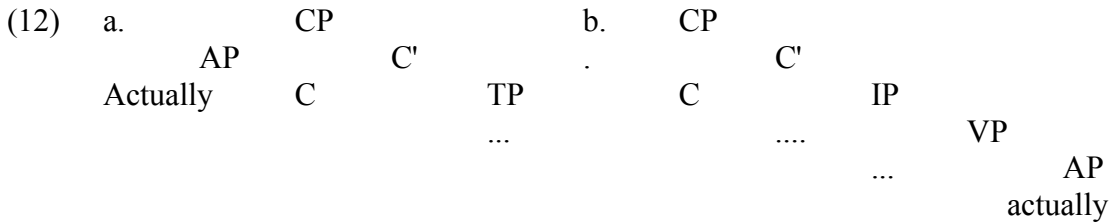
(2)		CP		Discourse		
	C	TP	T'	vP	v'	VP
		They	T	v	V	D
		uCase	they	v'	see	it
		3P	Pres	v	V	D
		u3P	Nom	v	V	D
		3P	Nom	v	V	D

(9) **Feature Economy**

Ignore features

(10) Those who offend **actually**, are most grievously punished (OED 1660 example).

(11) **Actually**, it is kind of an interesting problem (CSE-FAC97).



<i>For</i> , from P > C (<i>for him to do that ...</i>)	VP Adverbials > TP/CP Adverbials
<i>Like</i> , from P > C (<i>like I said</i>)	Negative objects to negative markers
Modals: v > ASP > T	
<i>To</i> : P > ASP > M > C	
<i>On</i> , from P to ASP	

Table 2: Examples of the LMP

Evidentials: *eu vi, diz que* etc are used as loans in Tariana.

see [direct, visual, experience] > *see* [visual]

Economy Principles are UG principles at work in the internalized grammar. Syntax is inert and all variation is in the lexicon. Hence there is a choice of pronouns as D or DP (HPP) and verbs as V or Aux (LMP).

3 The Linguistic Cycle

No cycle is the same; Both Feature Economy (LMP) and HPP; sometimes stopped

3.1 The Negative Cycle (in Northern Germanic, Finno-Ugric, Athabaskan-Eyak, Haida, Salish, Algonquian, Chinese, and English)

(13) Neg DP > Neg Adv > Neg > zero

(14) V > ASP > Neg > zero

Spec > Head + renewal:

(15) *þat mæli ek eigi* Old Norse
 that say-1S I not (*Njalssaga*, 219, Faarlund 2004: 225).

(16) *er eigi veit jarðar hvergi*
 what not knows earth nobody (*Poetic Edda, Lay of Thrym*, 2).

(17) *Men detta ække et forslag som vi har interesse av* Norwegian
 but that is-not a proposal that we have interest in (from Solstad 1977: 70).

(18) *Eg har ikke aldri smakt sånne brød* Sappen Norwegian
 I have not never tasted such bread

- ‘I haven't ever tasted that kind of bread’ (Sollid 2002).
- (19) Men det var nok ikke mye oppvarnting de fikk, for jeg merket **ikke aldri** at noen hadde kjærestebesøk den tiden jeg jobbet der. Norwegian
http://www.nkbf.no/Nyheter/2004/Brunborg_1_04.htm
- (20) Det "fria" tänkandet har nog **inte aldrig** existerat Swedish
 (www.filosofiforum.com/phpBB2/viewtopic.php?t=872&start=0&)
- (21) *Idtjim* (manne) *daejrjeh* Southern Sami
 NEG-PAST-1S (I) know
 ‘I didn't know’ (from Bergsland 1994: 44).
- (22) *In* *leat* ***goassege*** *dahkan* *dan* Northern Sami
 NEG-S-1 be never do-PART it-ACC
 ‘I have never done that’ (Trosterud p.c.).
- (23) *En* *ole* ***koskaan*** *maistanut* *sellaisia* *leipiä* Finnish
 NEG have never tasted such bread
 ‘I have never tasted such bread’ (from Sollid 2002).
- (24) *tendhghaaghetlteneę* Lower Tanana
 t +n +dh +gh +gh +es +ł +ten +ęę
 FUT QUA NEG QUA 3S 1S CAU ice NEG
 ‘I won't freeze it solid’.
- (25) ***k'aa*** *tinaktän* Upper Tanana
 NEG I-freeze-it-solid
 ‘I won't freeze it solid’ (from Kari n.d., p 55)
- (26) *Jan* ***pa*** *t-* *av-* *ale* *nan* *mache* Haitian Creole
 Jan not ANT IRR go in market
 ‘Jan wouldn't have gone to the market’ (DeGraff 1993: 65)

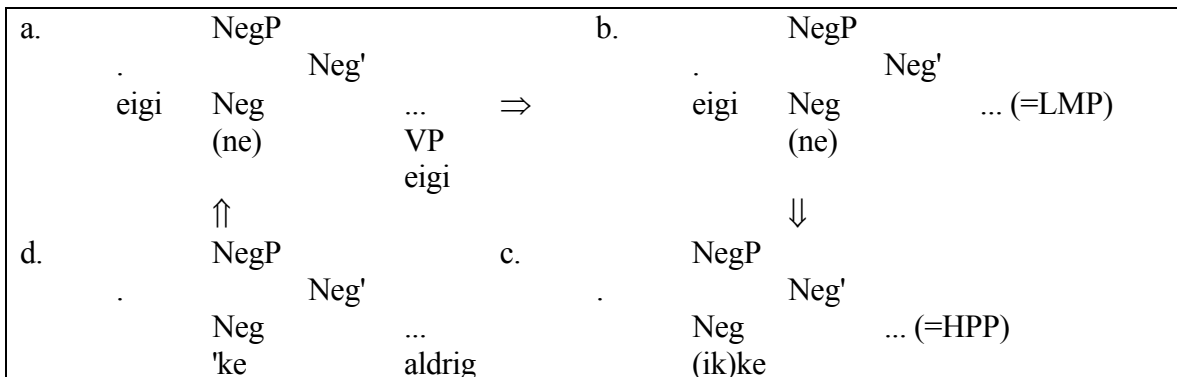


Figure 1: The Negative Cycle

Feature Grammaticalization

Chinese *bù* and *méi*; from lower to higher head:

- (27) *Méi* < ‘sink; die’; *bù* < *fú* is cognate with the verb ‘to eliminate’ Sagart (1999: 84)

- (28) MP
M NegP
^ hui Neg ASPP
bu ASP VP
bu
- (29) *wo bu hui tan gangqin* Chinese
I not can play piano
- (30) *bie guan men* (bie < *bu* and *yao* `need') Chinese
don't close door
`don't close the door' (Li & Thompson 1981: 415).
- (31) *Yao Shun ji mo ...* Old Chinese
Yao Shun since died
`Since Yao and Shun died, ...' (Mengzi, Tengwengong B, from Lin 2002: 5)
- (32) *yu de wang ren mei kunan, ...* Early Mandarin
wish PRT died person not-have suffering
`If you wish that the deceased one has no suffering, ...' (Dunhuang Bianwen)
- (33) *dayi ye mei you chuan, jiu zou le chulai* Early Mandarin
coat even not have wear, then walk PF out
`He didn't even put on his coat and walked out' (Rulin Waishi, from Lin 2002: 8)

3.2 DP Cycle

Spec to head (see Wood 2003; to appear):

- (34) a. *his þone onfangenan lichaman* Old English
his that received body
b. *his underfanzenan lichaman*
(*Gregory's Dialogues*, 155.9, from Wood, to appear: 14)
- (35) a. *min þæt ungesælige mod* Old English
my that unhappy spirit
b. *min ungesælige mod*
(*Gregory's Dialogues*, 4.9, from Wood, to appear: 15)

Head to affix (but *þat* has a different status):

- (36) *hinn siðasta vetr* Old Norse
the last winter (*Bjarni's Voyage*, l. 8, Gordon 1956)
- (37) *þat it helga sæti* Old Norse
that the holy seat `The holy seat' (Gordon 1956: 312)
- (38) *mann-s-inns óðal* Old Norse
mankind-GEN-DEF legacy.NOM
`Mankind's legacy' (*Konungs skuggsia*, 56, Faarlund 2004: 58).

Reinforcement from `below'; loss of features:

- (39) *(yek) ketaab-i* Farsi
a book-a

- (40) *Ich such' nicht so Ausbildungsplatz* Kanak Deutsch
 I search not that education-place
 'I am not looking for that kind of position' (from Wiese 2006).

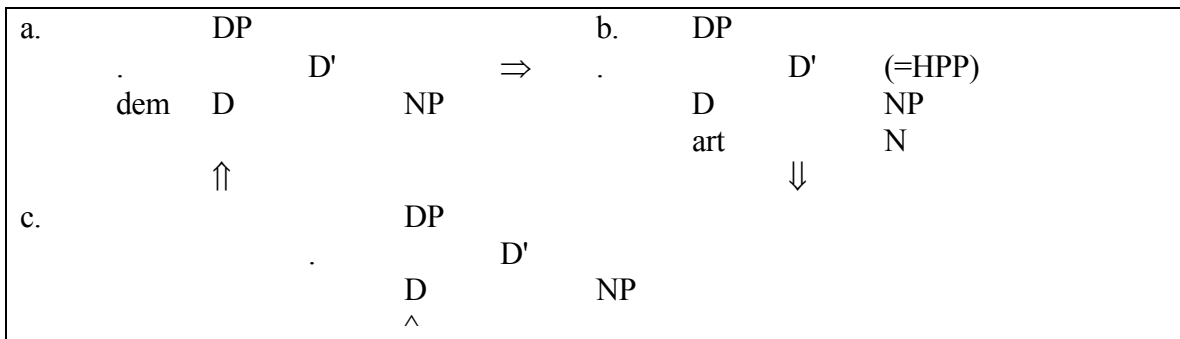


Figure 2: The DP Cycle

3.3 CP Cycle

High CP:

frank [manner, action, without restraint] > ...

- (41) and he shulde goo **frank** and quite. (OED 1475)
 (42) All other lawfull thinges..to do as liberally, **frankelie**, lawfully..as if they..had been naturally borne within this realme (OED, 1541)
 (43) O nothing; he only squeez'd me kindly by the Hand, and **frankly** offer'd me a Coxcomb's Heart. (1696, Vanbrugh, Relapse, I, 41)
 (44) *She.* —.. Can you wonder that I'm disinclined for amusement? *He.* —Frankly, I do. (OED 1888)

- (45) *Kven du såg* Norwegian variety
 Who you saw 'Who did you see'.

Reduced CP:

- (46) *Les enfants que jouent là* Colloquial French
 the children who play there

That-relative: spoken 80-90% *that* (or zero)
 written 10-20% *that*

- (47) I haven't been to a party yet that I haven't got home the same night.

Finite and non-finite complementizers:

after [time, order, motion, past]; no lateral grammaticalization since movement first:

- (48) a. **æfter him** Stephanus feng to rice. (Chron A, anno 814 [816])
 b. **æfter þissum gefeohte** cuom micel sumorlida. (Chron A, anno 871)
 (49) a. **Æfter þysan** com Thomas to Cantwarebyri
 'After this, Thomas came to Canterbury'. (Chron A, anno 1070)

- b. **æfter ðon** uutedlice ic eftariso ic forlioro vel iowih in galileam
 `after that surely I arise-again I come before you in Galilee' (Lindisfarne
 Matthew 26. 32).

	<892	>893
Dem	2/26 =8%	17/22 =77%
Fronting	7/26 =27%	12/22 =55%

Table 3: Percentages of demonstratives (Dem) and PP fronting with *after* in Chron A.

Phrase:

- (50) **After that** the king hadde brent the volum (Wyclif 1382, taken over in Coverdale 1535 and KJV 1611, from the OED).
 (51) **After that** Raleigh had Intelligence that Cobham had accused him, he endeavour'd to have Intelligence from Cobham (HC, EModE2)

Head:

- (52) **Aftir** he hadde take þe hooli Goost (c1360 Wyclif *De Dot. Eccl.* 22).
 (53) **After** thei han slayn them (1366 Mandeville 174).
 (54) a. PP PP 900 (Chronicle A) - present
 b. PP (C) 950 (Lindisfarne) - 1600 (OED 1587) =LMP
 c. P C 1220 (Lambeth) - 1600 (OED 1611)
 d. C 1360 (Wycliff) - present =HPP

Same with *for*:

The causative PP *for* DP > Spec CP (=LMP) > Head (=HPP)

- (55) **for** werefyhtum ... **and for** arstafum usic sohtest
 for fighting ... and for support (you) us sought
 `You wanted us to help fight' (*Beowulf* 457-8).
 (56) **ouper for untrumnisse ouper for lauerdes neode ouper for haeleste ouper for hwilces cinnes oþer neod** he ne muge þær cumon
 `either from infirmity or from his lord's need or from lack of means or from need of any other kind he cannot go there' (PC, anno 675).
 (57) **forþam** Trumbriht was adon of þam biscopdome
 `because T had been deprived of his bishopric' (PC anno 685).
 (58) **ac for þæm þe** hie us near sint, we ... ne magon ...
 but for that that they us close are, we ... not may ...
 `but because they are near to us, we can't ...' (*Orosius*, Bately 122.18-9).
 (59) **for þæt ilc gær warth þe king ded**
 because (in) that same year was the king dead (PC, 1135, 6)
 (60) **Locrin 7 Camber to þon scipen comen. for to habben al þa æhte**
 Locrin and Camber to the ships came for to have all the goods
 `Locrin and Camber came to the ships to take all the goods' (Layamon, *Caligula* 1113-4).

3.4 Economy and Renewal: internal and external change

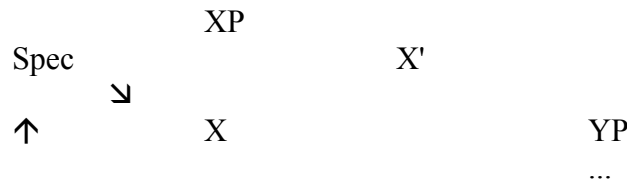


Figure 3: The Linguistic Cycle

(61) Specifier Incorporation Principle (SIP)

When possible, be a specifier rather than an adjunct.

Why zero? reanalysis:

(62) *///>||>|* halli///hino > hall//inn > *hall/en (Faarlund 2005: 9-10)

Von der Gabelentz (1891: 256) uses "Deutlichkeit" ('clarity') and "Bequemlichkeit" ('comfort') as important (competing) factors. Jespersen (1922: chapter 14, §6) discusses an 'Ease Principle', which mainly deals with articulatory ease of pronunciation, and puts it this way: "the correct inference can only be that the tendency towards ease may be at work in some cases, though not in all, because there are other forces which may at times neutralize it or prove stronger than it". Van Gelderen (2004): prescriptivism (e.g. Rule prohibiting P-stranding) and innovation both interacting with Economy.

3.5 Where do the cycles start?

Negative cycle: the role of person and tense

- (63) But þer is a pryue qwykyng þat God doþ ny þe deþ þat we **cannot** telle of, but ȝif God wole schewon hit vs, and þerfore foly iugement schulde be fled in þis mater. (Wycliff Sermons 16)
- (64) Bot of oo þing I warne amonges alle oþer: I **cannot** see who may trewliche challenge comunite þus wiþ Ihesu (Cloud of unknowing pp. 21-2).
- (65) And to þis I **cannot** answeere þee bot þus: 'I wote neuer.' (Cloud of unknowing pp. 25).
- (66) And þerfore I wole leue al þat þing þat I can þink, and chese to my loue þat þing þat I **can-not** þink (Cloud of unknowing pp. 26).

	total	% with cannot
I	8176	1.2%
we(e)	1468(269)	.6(2.2%)
he	4963	.3%
hee	505	.2%
she(e)	799(161)	.1(0)%
they	3107	.4%

Table 4: Use of *cannot* with different pronouns as a percentage of total pronoun use

French: the same (Ashby 1981, Moreau 1986, and Dufter & Starke 2005)

TP cycle: Pronouns > agreement

- (67) She's very good, though I perhaps I shouldn't say so (BNC HDC)
- (68) if I had seen her, er prints I maybe I would of approached this erm differently (BNC F71).
- (69) I actually I'd like to see that again (BNC-HMN 901).
- (70) I always get something wrong, I always I kept, I kept getting to kiss her flatmate's chest (BNC-KDA 5676).

	uncliticized	cliticized	total
<i>I</i>	2037	685 (=25%)	2722
<i>he</i>	128	19 (=12.9%)	147

Table 5: *Cliticization to pronouns in CSE-FAC*

- (71) Me, I was flying economy, but the plane, ... was guzzling gas (BNC – H0M 36)
- (72) You, you didn't know she was er here (BNC – KC3 3064)
- (73) %Her, she shouldn't do that (not attested in the BNC)
- (74) *As for a dog, it should be happy.

- (75) *J'ai vu ça.* French
I-have seen that
- (76) **Je probablement ai vu ça* French
I probably have seen that
- (77) *c'est que chacun il a sa manière de ...* Swiss SF
(Fonseca-Greber 2000: 338).
- (78) *Gnun a m capiss* Torino
Nobody he me understands (from Poletto 2004)

4 Grammaticalization in Language Use and Development

UG Principles: guidance to the child (in acquisition) and the adult (in the derivation).

Hard to know what the exact input is.

4.1 The Head Preference Principle

Relative pronouns:

Children: 56% *that*, 42% zero, 2% *who* (Diessel 2004)

- (79) those little things that you play with (Adam 4:10).

CHILDES, Kuczaj corpus, Abe, age 4-5: 82% *that*, 18% *wh-*. There is no evidence that the *wh* is not a head, however, since *whom/to who* do not occur:

- (80) **a dragon that** was this little (Abe, 4;0.16)
- (81) You know **the round part where** they dig (Abe 4; 1.5)

French kids have no difficulty. Even though Subjects often appear after the V, the (weak) pronouns never do:

- (82) *moi je veux regarder*
me I want watch (Gregoire 27 months, Pierce 1992: 96)
- (83) *Moi je sautes et je descends*
me I jump and I go-down
'As for me, I jump and go down' (Philippe, 26 months, Pierce 1992: 97)

4.2 The Feature Reduction Principle

Complementizers are late merged prepositions

Josefsson (2000: 398): Swedish "children first acquire the PP and then, directly after that the subordinate clause". She divides the acquisition into I no Ps; II occasional P; III Ps and then Cs. "most often, the children do not start using complementizers at all until they have reached a 90% us of prepositions" in obligatory contexts.

- (84) *precis som en kan/ som en kanin*
just like a rab/ like a rabbit
- (85) *grisen, den som heter Ola*
pig that who is-called Ola
(Embla, 27 months, both from Josefsson 2000: 410)

CHILDES, Kuczaj corpus, English *like* and *for* show the same data as in Swedish:

- (86) **like** a cookie (Abe, 3.7)
- (87) no the monster crashed the planes down **like** this **like** that (Abe, 3.7)
- (88) watch it walks **like** a person walks. (Abe, 4.9.19)
- (89) Daddy # do you teach **like** you do [/] **like** how they do in your school? (Abe, 4.10)
- (90) FATHER:
it looks **like** some birds have eaten some of the bread. (Kuczaj file 206)

Same corpus with *for*:

- (91) Mom # this white one **for** me? (Abe 2.7, file 25)
- (92) two Dad # how come some people have cookies **for** lunch sometimes?
(Abe 3.7, file 116)
- (93) ok then we could go way # way # way down from the stairs and dig **for** that rock I saw (Abe 3.7, file 116)
- (94) yeah and I said I was waiting and waiting **for** you to come and I [/] (Abe, 3.2.1)
- (95) it's not too high up # but I'm waiting **for** Silver to get ready. (Abe, 5.0, file 210)

Auxiliaries are late merged verbs

Wanna is the first (semi)-modal to appear, followed by *gonna* and *hafta*, before *can't* (Stephany 1986: 387).

- (96) I go get it (CHILDES, Bates corpus, Gloria, snack, 28 months)

5 Conclusion

- UG Principles, such as HPP and LMP, help the child internalize certain lexical items; they also help the adult with a derivation.
- Examples of linguistic cycles show the interplay between internal (economy) and pragmatic factors.

Notes and references

The child data used are from the CHILDES database (<http://childes.psy.cmu.edu>). The data for Abe are described in Kuczaj (1976), from Gloria in Bates et al. (1988). Please e-mail me for references.