

Early operators and late topic-drop/pro-drop¹

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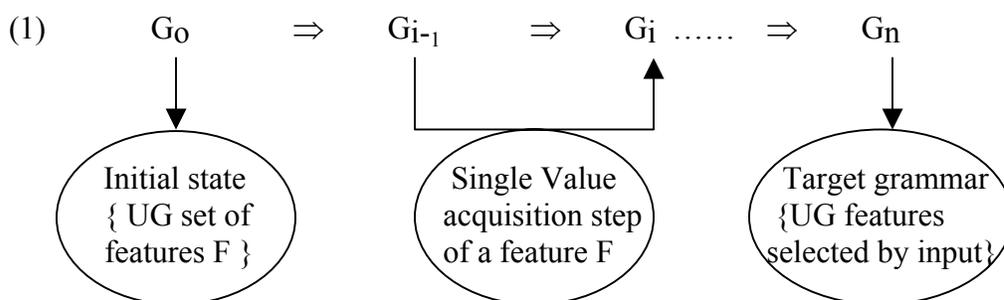
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This paper compares two reduction principles in child language, Tense/Agreement Omission (Schütze 1997, Wexler 1998) and Root Peripheral Truncation (Rizzi 1994, 2001). The paper argues that the empirical content of these proposals as well as their partial overlap follows from an inherent hierarchy of acquisition steps of the kind predicted in Jakobson (1942). The empirical support for this reinterpretation follows from the construction of longitudinal graphs. The approach accommodates the lack of optional infinitives in Romance languages.

1. The acquisition of grammatical features

1.1 Jakobson's order of acquisition steps

Children have a special talent to spot grammatical features. Yet, some grammatical features are acquired before others. Jakobson (1942) had a research proposal for it. Phonological features would fit into a natural hierarchy of UG. That hierarchy would predict the earliness of acquisition. Jakobson postulates that such a UG hierarchy of learnability should exist for syntax as well as it exists for phonology. Jakobson's research program, as I understand it now, is simple: Find that hierarchy of features and predict the order of acquisition steps given any target grammar.



G_0 = initial state before the systematic pressure of grammatical features

G_i = intermediate grammar

G_n = target grammar

$G_{i-1} \Rightarrow G_i$ = step towards intermediate grammar G_i by the acquisition of a feature F

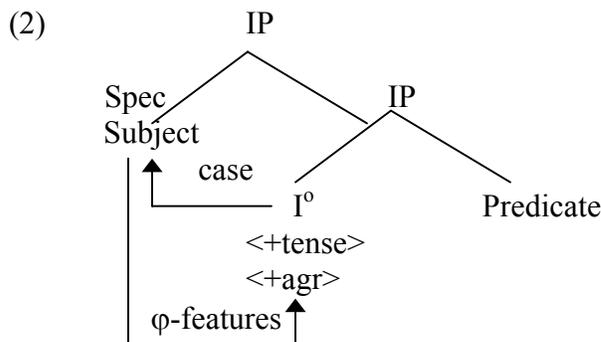
For each acquisition step one grammatical feature F is singled out, identified and subsequently acquired. Jakobson's research proposal implies the Single Value Constraint for language acquisition (Clark 1992). In addition, it stresses the predictable hierarchy of feature acquisition c.q. parameter setting (cf. Evers and Van Kampen 2001, Van Kampen and Evers 2004).

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The present-day study of language acquisition relates the reductions in child language to the influence of UG principles. I will argue that the child's *order of acquisition steps* must become a crucial ingredient of that approach.² In order to develop that point, I will shortly consider two present-day Reduction Principles that partly predict child language. They are (i) Wexler and Schütze's Tense/Agreement Omission and (ii) Rizzi's Root Peripheral Truncation. My question will be how these two Reduction Principles relate. I will answer that question by placing them into a more Jakobson-like linear order of acquisition steps. This approach will reveal why agreement, topic-drop and pro-drop must appear late.

1.2. Wexler's Optional Infinitives

Child language often uses predicates that are not Inflection-marked, at least not overtly. The remnant predicate may take the form of an infinitive, a gerund, a past participle or a non-verbal head. Wexler and Schütze offer the following explanation. The acquisition procedure expects a unique checking for each functional feature. Suppose now that the Spec,I subject somehow confronts the acquisition procedure with a double checking requirement (Schütze 1997, Wexler 1998). Tense and Agr features both relate to the obligatory presence of the subject.³



The double-checking procedure might cause a delay in which the Infl-marking <agr/tense> of the predicate is left out. Pro-drop languages like Italian or Spanish require no double checking. They check the subject on Tense only.⁴ This predicts that pro-drop languages show no optional infinitives to speak of, which is according to fact (Guasti 1994). There is no significant delay for agreement in pro-drop languages, at least not on verbal predicates.

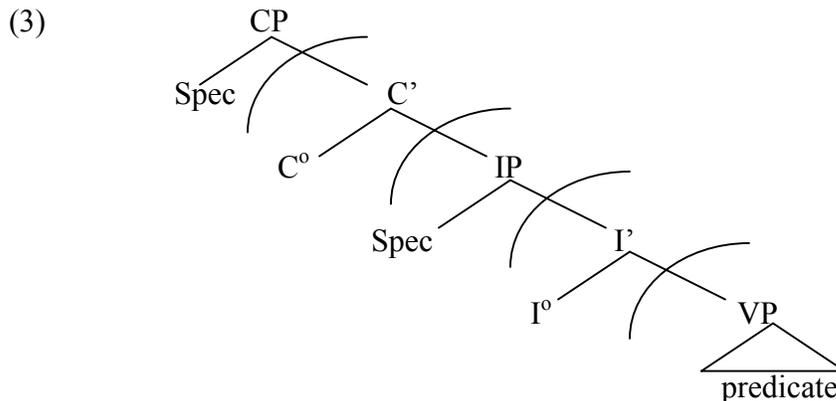
² The issue of acquisition order as such was first raised in Brown (1973: 313ff).

³ I use the label I° here for the early grammatical marking of <finiteness> on the predicate. On purpose, I do not yet enter the more technical issue how I-features like Tense, Aspect and Agreement are best represented in the structure.

⁴ Pro-drop is of course not obligatory. It remains possible to add a lexical, non-pronominal subject. This subject seems to enter the same complex subject licensing that inspired optional infinitives in non-pro-drop languages, but Wexler (1998) suggests, following Barbosa (1996), that lexical subjects in Romance languages are in a higher position than INFL.

1.3. Rizzi's Truncations

Rizzi's (1994, 2001) abstract truncation principle fits several simplifications in child language. Child language often prefers to drop the peripheral specifier in root clauses. Plausibly, the peripheral specifier truncation may simplify the processing of constituent hierarchy in some general way.



Truncation appears in V-2nd Dutch/German as root topic-drop in Spec,C, and in English/French as root subject-drop in Spec,I. If the truncation includes in addition the functional head I° or C°, one gets the constructions studied by Wexler as Optional Infinitives. Rizzi claims as well that there is no significant delay for agreement in pro-drop languages.

1.4. Conflict of Reduction Principles

Now, let's see how the two Reduction Principles relate. Both Wexler/Schütze's proposal and Rizzi's proposal

- (4)
- target I°/C° projections
 - imply I° features and/or D° features (Spec DP, I°/Agr)

Besides that common point there is a difference as well, see (5).

- (5)
- Agr/Tense omission targets heads of the Infl-type
 - Truncation targets specifiers (Spec,I)

This leads me to the questions in (6).

- (6)
- What is reduced first in child language?
 - an Inflection head?
 - an Inflection specifier?
 - What is the licensing status of its structural partner at that moment?
 - If a functional head drops, its specifier must have a different licensing status.
 - If a specifier drops, its functional head must have a different licensing status.

To put it more simple: *what happens when?* The ‘when’ question will require longitudinal graphs from a single child moving towards a single grammar, as elaborated in Van Kampen (1997, 2000), Evers and Van Kampen (2001). Subsequently, the reductions must be related to the order of acquisition steps (if any).

2. The acquisition of I-marking and D-marking

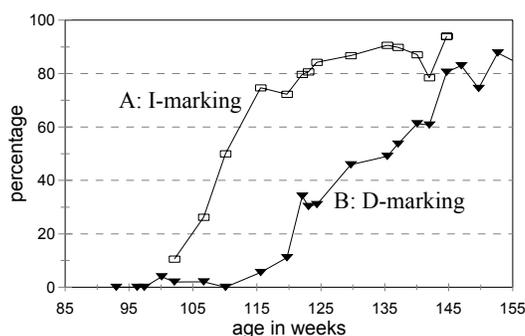
The acquisition steps and the intermediate grammars they define follow a linear order. Some steps will precede others. The order of acquisition steps is probably the same for all children, given a target language. The order and the relative speed of acquisition steps can be shown by the construction of acquisition graphs. If we had a clear picture of language acquisition, we should be able to predict the order of acquisition steps given a target language. The acquisition order as pointed out by Jakobson will give a key to the history of grammar and to language typology.

The linear order and the relative speed of acquisition steps should be predictable given a target grammar if we knew how learnability is controlled by input and UG. We still have to go some way to reach that goal, but to my mind it can be reached by the careful construction of acquisition graphs. I think that I have succeeded in reaching two important points along that way, see (7) (Van Kampen 2004a).

- (7) a. The acquisition of I-marking (auxiliaries, copulas, finite verbs) precedes the acquisition of D-marking (articles, possessives, demonstratives).
- b. The acquisition of D-marking coincides with the acquisition of pronominal reference tracking (the acquisition of anaphoric pronouns/clitics)

The longitudinal graphs for the acquisition order in (7)a are given in (8). They are constructed from the files of Dutch Sarah, between two and three years old.

(8) *actual graphs*

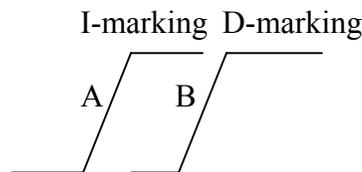


(Van Kampen 2001) Dutch Sarah: The acquisition of finite verbs and determiners
 Graph A: % of predicates marked by I⁰ (a finite form) + a spelled-out subject
 Graph B: % of arguments marked by D⁰ (<± definite> determiners before nouns)

Graph A represents the rising percentage of I(nflection)-marked predicates by {auxiliaries, modals, copulas, <+finite> inflection}. Within 20 weeks, I-marking rises from some 15% to more than 80% of the predicates. This is close to the level of the adult conversation, which is 90%. Graph B starts shortly after I-marking flattens near the target level. This graph takes some 25 weeks and represents the D(eterminer)-marking of arguments by means of {articles, demonstratives, possessives}.

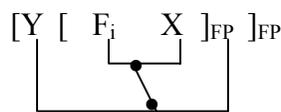
It is possible to make a linear idealization of the graphs in (8), see (9). Let the point of irreversible rise be the eureka point and the point within 10-20% of the adult norm the acquisition point (Evers and Van Kampen 2001). The time difference between these two points is the acquisition speed and the order between the acquisition point of A and the eureka point of B yields a clear case of acquisition order. Consider the case with graphs A for I-marking and B for D-marking in (9).

(9) *linear idealization*



The two graphs separate early child language (before year 2) from later child language (after year 3). My claim is that only after and due to I- and D-marking, lexical categories, phrasal structure and grammatical relations get a formal grammatical basis, as stated in (10). This option, chosen here and in Van Kampen (1997, 2004b, to appear) for language acquisition, was implemented earlier in computational approaches to category assignment (Buszowski 1987). It has been recently advocated in theoretical approaches (Halle and Marantz 1993, Baker 2005, Borer 2005).

(10) *input frame*



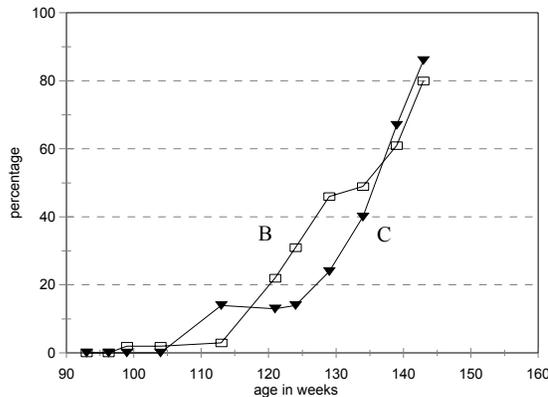
- selection relation
- strict order
- adjacency
- high frequency

where X = complement F_i
 Y = specifier F_i

- a. if F_i = D^o<+definite>, then X = N
- b. if F_i = I^o<+finite>, then X = V

There is another important point. It relates to D-marking and was stated in (7)b. It is possible to make a longitudinal graph for the acquisition of free anaphoric pronouns. Consider graph C in (11).⁵

(11) *actual graphs*



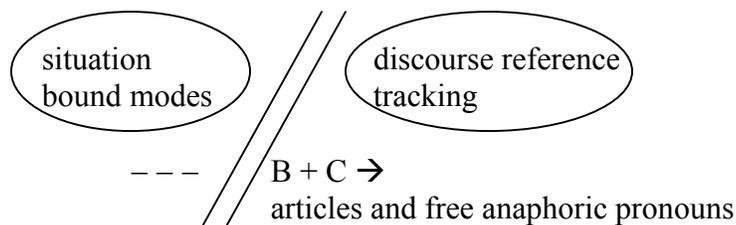
(Van Kampen 2004a) Dutch Sarah: the acquisition of D⁰ articles and free anaphors
(graph based on 2 consecutive files)

Graph B (again) % of arguments marked by D⁰ (<± definite> determiners before nouns

Graph C reflects the rising use of free anaphoric pronouns *hij/zij/het* ('he/she/it').

The graph for D-marking (B) and the graph for free anaphoric pronouns (C) coincide for Dutch Sarah.⁶ A linear idealization of the graphs in (11) is given in (12).

(12) *linear idealization*



⁵ The graph for D-marking in Dutch is based on the opposition <± definite>. See Van Kampen (1997, 2001, 2003, 2004a, to appear), Van Kampen and Evers (2004) for the idea that speed and order of acquisition are imposed by the quantity and quality of ± feature oppositions.

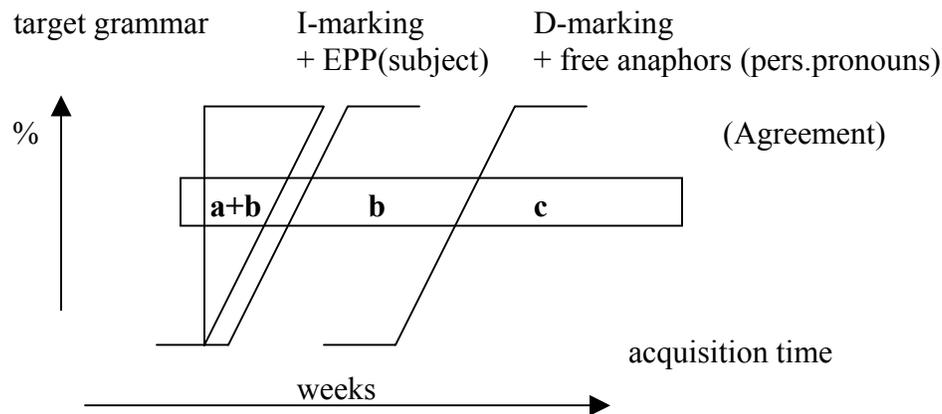
⁶ The simultaneity between D⁰-marking by articles and by free anaphors holds especially for Dutch (Van Kampen 2004a). The situation in French and English is slightly different. The free anaphors in English may also function in direct connection with the speech situation. They appear before the systematic use of articles. The V-second grammar of Dutch applies for such situation highlighted cases a demonstrative *die/dat* ('this/that'). It stresses the topic and is used as an A-bar pronoun in Spec,C (Van Kampen 1997). The A-bar property is related to the V-second character of Dutch that has been acquired a few weeks earlier. The A-bar pronouns will soon vary with the A-bar question pronouns *wie/wat* ('who/what') (Van Kampen 1997). The French free anaphors are clitics. They can only function within discourse. Their identification follows the full acquisition of <-definite> article. The typological variations will get quantified and it will be argued that they do not weaken the main conclusion that systematic and intensive use of C⁰/I⁰-marking and D⁰-marking within the sentence is maintained to construct the discourse coherence. The latter makes human language situation free.

This is a striking confirmation of Postal (1968) that articles and pronouns represent the same category D^0 . It can be explained as follows. Both articles and free anaphoric pronouns are D-elements that refer back to previous linguistic discourse. The obsessive need of West European languages to add the $\langle +/- \text{ definite} \rangle$ article seems somewhat redundant. But it can be understood as a device that supports the speaker in discourse reference tracking. So, the rise of D-marking shows Sarah's growing ability in reference tracking. She starts to enter real conversations, rather than holding on the situation-bound exchanges of early child language.⁷ Her speech grows situation-free, if I may borrow Chomsky's (1968) phrasing for this dramatic moment.

3. Overlap between the Reduction Principles

It is now possible to fit the two Reduction Principles into the acquisition space marked by I-marking and D-marking. See (13) and consider the following re-interpretations.

(13)



The triangular space covers Wexler's Optional infinitives and copula-less predicates. It fits into the acquisition graph for I-marking and EPP. This space diminishes with the progress of acquisition in time. I-marking and Optional Infinitives are two sides of the same coin.

The rectangular space covers Rizzi's Left Peripheral Truncations. At first side, it does not fit into the acquisition graph for I-marking and EPP. Left Peripheral Truncations appear before I-marking, after D-marking and in between. The triple cutting of the rectangular space does not necessarily weaken the significance of the two fundamental acquisition graphs, although it may seem that way. Rizzi's Truncation principle is a structural abstraction. It takes different effects in different periods. For that reason, I will distinguish three different types of truncations, exemplified in (14)-(16) in the next section.

⁷ The parallel acquisition of determiners and 3rd person pronouns has also been argued for by Hoekstra and Hyams (1995) and Schaeffer (1997).

<i>Type a</i> (e.g. optional infinitives)	no head I ^o no Spec I ^o	<i>beertje slapen</i>	(bear sleep)
<i>Type b</i> (e.g. imperatives)	head I ^o no Spec I ^o	<i>kom eens</i>	(come to me)
<i>Type c</i> (e.g. topic-drop, pro-drop)	head I ^o /C ^o ∅ Spec I ^o /C ^o	(∅) <i>slaapt ook</i>	((he) sleeps too)

Type a, type b, and type c all seem to lack a peripheral specifier at PF, especially if one has the adult system in mind. *Type a* lacks the peripheral specifier and in addition it lacks the Inflection-marked head. Type a appears mainly left of the I-marking graph, as it coincides with the triangular space. *Type c* is a predication with unambiguous full Agreement. It appears to the right of D-marking only. *Type b*, as I will show, exists in adult language productively mainly as the imperative, an agent-implying mood. In my view, child language employs more such agent-implying moods. Most of them give way to EPP predication in the adult language.

My main point will be now to defend the relevance of the type a-b-c distinction. The major objective of that attempt will be to get the two Reduction Principles in a UG order of acquisition steps. We will first see some examples of types a, b and c, and then the characteristics.

4. Rizzi's Truncations for three different Predicate Types

4.1. Examples of the predicate types

The predicate types a-b-c are exemplified in (14)-(16). All may be interpreted as Rizzi-type truncations of peripheral material. Note that the part in italic is the child language utterance, the child's intake. The remaining part of the input sentence is not within the child's competence. The input reduction leads to preliminary acquisition frames, so-called *evidence frames* (Van Kampen 1997).

Type a is typical early child language. It is a bare predicate and represents one of Wexler's Optional Infinitives.

- (14) Type a
- | | | | | |
|----|--------------------|------------------------------|-------------------------------------|-----------|
| a. | [<i>jij</i>]Spec | [moet] _I | [<i>liedje zingen</i>]predicate | (Dutch) |
| b. | [∅]Spec | [<i>vuoi</i>] _I | [<i>vedere libro?</i>]predicate | (Italian) |
| c. | [<i>tu</i>]Spec | [<i>vas</i>] _I | [<i>chercher camion</i>]predicate | (French) |

Type b is the difficult one. It could be interpreted as a case of an early finite verb with a null subject, but I will argue that its typical restrictions rather fit the picture of a mode-operator like the imperative (see Van Kampen 1997: chapt.4).

- (15) Type b
- | | | | | | |
|----|------------------------|------------------------------|--------|-------------------------------------|-----------|
| a. | [ik] _{Spec} | [<i>kan wel</i> |]CP/IP | 1 st p (speaker) implied | (Dutch) |
| b. | [∅/io] _{Spec} | [<i>voglio chicco</i> |]IP | 1 st p (speaker) implied | (Italian) |
| | [∅] _{Spec} | [<i>canta canzone</i> |]IP | 2 nd p (hearer) implied | |
| c. | [je] _{Spec} | [<i>veux pomme</i> |]IP | 1 st p (speaker) implied | (French) |
| | [∅] _{Spec} | [<i>mets voiture dedans</i> |]IP | 2 nd p (hearer) implied | |

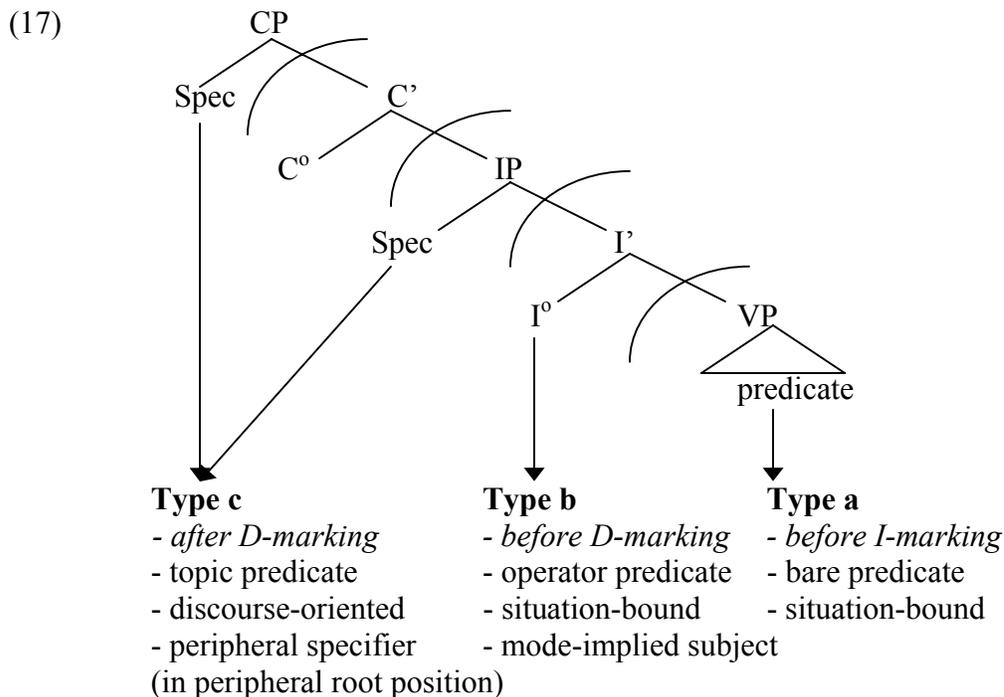
Type c is typical for the second part of a conversation pair, in adult language as well as in later child language. Type c is discourse oriented, whereas type a/b are situation-bound.

- (16) Type c
- | | | | | |
|----|-------------------------------------|-------------------------|--------|-----------|
| a. | [∅ <i>d-topic</i>] _{Spec} | [<i>leest een boek</i> |]CP/IP | (Dutch) |
| b. | [∅ <i>pro</i>] _{Spec} | [<i>legge un libro</i> |]IP | (Italian) |

Truncations should be universal. So, a legitimate question is why type a (Wexler's Optional Infinitives) hardly appear in the acquisition of a pro-drop language like Italian? As I will argue below, radically different answers can be given to that question.

4.2. Characteristics of the predicate types

The left Peripheral Truncations a, b and c have different relations to the functional categories I or C.



Type a lacks I/C-marking completely. Type a is early child language. It is a situation-bound utterance.

Type b is based on a form that reminds of or is <+finite>, like the imperative. The specifier is absent, but it is not the case that a peripheral specifier has optionally been left

out. Rather, the peripheral specifier cannot be present. My contention is that a fixed position for the sentential topic (peripheral specifier) is only present in type c sentences that have a formal discourse relation to previously uttered sentences. Type b, by contrast, marks a situation-bound intention by excluding a formal topic and by excluding the peripheral specifier.

Type c is based on a finite form with all I/C oppositions marked. It has a peripheral specifier. The peripheral specifier may remain empty as an option in conversation pairs. The type c construction is typically discourse dependent.

5. Type b and type c predicate types

5.1. Type b operator predicates

Type b predicates were introduced in Van Kampen (1997) as ‘mode-implied subjects’. Let us have a closer look at the type b predicates. It may be clear by now that I will not consider the operator predicates with mode-implied agent as examples of early subject-drop or early topic-drop. They rather belong to restricted situation-bound utterances already present in the proto-grammar before I-marking and D-marking. Examples of type b predicates, in Dutch child language (around two years) are given in (18). See also Jordens (2002).

(18)	Dutch		predication	
			┌───────────┴───────────┐	
		illocution operator		predicate
		<+finite>		┌───────────┴───────────┐
wish	<i>kwi</i>	(I want)		
intention	<i>kgā</i>	(I intend)		
permission	<i>mag</i>	(I am allowed)		
order	<i>doe</i>	(you do (=must))		
intention	<i>moet</i>	(it should be (=goes))		
naming	<i>is</i>	(this is a --)		

Type b predicates are not examples of early peripheral specifier-drop, because it is the illocutive function of the utterance that relates the predicate to first person (wish/intention), to second person (imperative), or to third person (intention/naming). Topic-drop, by contrast, relates to a topic that has already been expressed, in previous discourse, which is a completely different state of affairs.

Comparable type b predicates appear in English, French and Italian child language, see the examples in (19). Dutch Sarah (Van Kampen), French Grégoire (Champaud), Italian Diana and Martina (Calambrone), English Adam (Brown).

(19)		<i>Dutch</i>	<i>French</i>
	1 st pers. (wish)	- hoef niet bad (S.2;1)	- veux pas lolo (N.2;1)
	2 nd pers. (imperative)	- doe ogen dicht (S.1;11)	- mets dedans (G.2;0)
	3 rd pers. (intention) ⁸	- moet liedje aan (S.2;3)	- va chercher (G.2;0)
	3 rd pers. (naming)	- is bal (often)	- est ballon (often)
		<i>Italian</i>	<i>English</i>
	1 st pers. (wish)	- voglio chicco (M.1;11)	- no wanna open (A.2;6)
	2 nd pers. (imperative)	- do alla mamma (M.1;11)	- put glove (A.2;4)
	3 rd pers. (intention)	- va a lavorare (D.2;1)	- goes there (A.2;6)
	3 rd pers. (naming)	- è palla (often)	- is ball (often)

The examples in (19) all have the characteristics of the type b operator predicates. Firstly, they allow no free variation, they rather have an illocution-fixed person, see (20).

- (20) a. *kwi* is typically first person *I* (agent) *want*
 b. *doe* is typically second person *you* (agent) *do/put*
 c. *moet* is typically *it must be that*

Secondly, there is no option for a peripheral specifier. The implied subject is never spelled out. The type b verbs are a fairly closed class of modal type qualifiers.

Thirdly, like the imperative in the adult language, the type b predicate head in early child language is a root phenomenon.⁹

- (21) a. type b predicate heads are sentence initial in C⁰/I⁰
 b. they typically do not allow the topic-discourse slot in the specifier position (because type b is situation-bound)

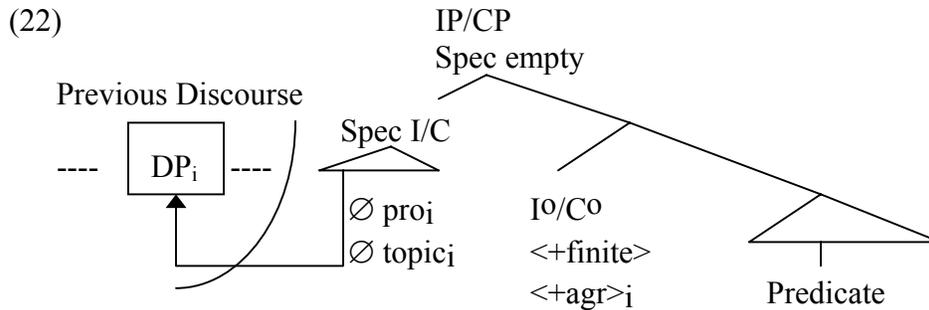
The modal operator in Dutch child language is often derived from a finite modal verb in the adult language, as the examples in (18) show, but as soon as the finite forms come under the sway of the EPP (the I-graph), the system picks up first and second personal pronouns (*I/you*). Type b is then changed into an EPP predicate by adding the personal pronoun and it disappears as predicate type b (except for the imperative).

5.2 Type c: Discourse topic-oriented predicates

For type c, the peripheral specifier may be substituted by an empty A-bar pronoun in both Italian pro-drop and Dutch topic-drop. A characterization of the discourse properties of the A-bar pronoun in pro-drop and topic-drop languages is given in Van Kampen (1997). Note that A-bar pronouns concern third person. First and second person are not discourse-oriented, but situation-bound (speaker/hearer oriented). They appear earlier (see also Pinto 2004).

⁸ See Fleischman (1982) for a tight connection in adult language between modal verbs of obligation like *must/devoir/moeten* and later aspectual expressions for the future *go/aller/gaan*.

⁹ See Van Kampen (2001, to appear) and Evers and Van Kampen (2001) for the learning steps that are needed to acquire I⁰/C⁰. This point is irrelevant for the present argumentation.



The empty A-bar pronoun is 3rd person only, unspecified for phi-features. The A-bar pronouns belong to discourse grammar. The specifier position can, but need not be empty. See respectively (23)a and (23)b.

- (23)
- | | | |
|----|-----------------|-------------------------|
| a. | [∅ d-topic]Spec | [leest een boek]CP/IP |
| | [∅ pro]Spec | [legge un libro]IP |
| b. | [die]Spec | [leest een boek]CP/IP |
| | [mamma]Spec | [legge un libro]IP |

Topic-drop and pro-drop 3rd person have the characteristics in (24).¹⁰

- (24)
- they refer to a previous discourse topic
 - they are a 3rd person pro (pro-drop) or d-pronoun (topic-drop)
 - they typically appear upon speaker change (Postma 2004)

The empty pronoun can only refer to the topic of the preceding sentence. See Grimshaw and Samek-Lodovici (1998) and Van Kampen (1992, 1997:89f) for an elaboration.

5.3 Rise of type c predicates: topic-drop (Spec, C ∅)

It may appear problematic that type b and c look rather the same. Both seem to display a finite verb and a truncated specifier. Nevertheless, I claim that type b can appear before D-marking, whereas type c can only appear after D-marking. Do I have empirical evidence for that? Sure, I do. It is very well possible to distinguish type b predicates from type c predicates, since

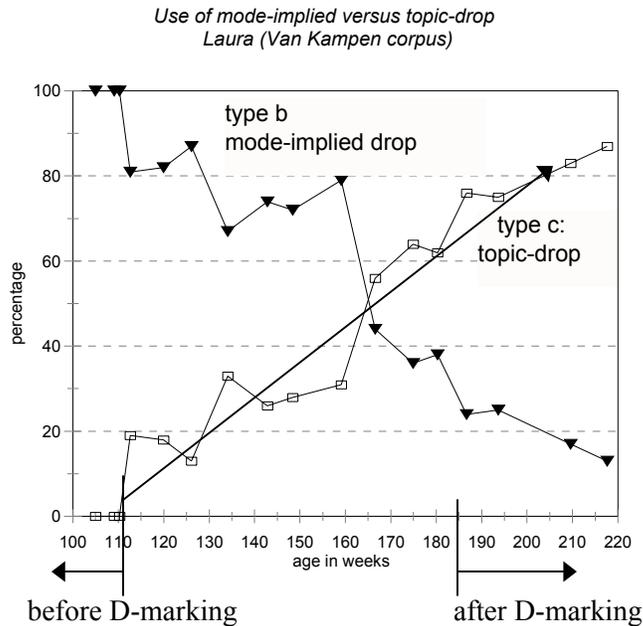
- (25)
- Type b are a small set of verbs with a fixed person, and there is no 3rd person agent *he/she* involved
 - Type c, by contrast shows full Agreement and there is a 3rd person agent involved.

In (26), the space of finite predicates without peripheral specifier for Dutch Laura, between week 110 (onset of D-marking) and week 220 is given. Within that period,

¹⁰ Of course, unlike pro-drop, topic-drop is not restricted to empty subject pronouns, but includes object-drop and adverb-drop. Moreover wh-elements may be dropped. See for the characteristics of topic-drop in Dutch Van Kampen (1992, 1997:chap.4), and in Swedish Mörsjö (2002). Van Kampen's (1989, 1997) analysis generalizes over topic-drop and wh-drop in V-second languages.

Laura reaches her type c ‘truncation’ from marginal to over 80%. Her type c subject topic-drop closely follows the rise of D-marking (Van Kampen 1997: 107).

(26) Percentual shift between type b and type c towards the adult norm (taken as 100%)



- Graph type b: Decline of operator predicates (situation-bound) characterized by
 - (i) fixed ‘truncation’ (ii) a fixed verb (iii) no 3rd person *hij/zij* (‘he/she’) involved
- Graph type c: Rise of subject topic-drop in Spec,C root (discourse-oriented) characterized by
 - (i) optional ‘truncation’ (ii) full agreement (iii) 3rd person.

The predicate space just before D-marking and just afterwards shows both types. The longitudinal graph of type c predicates, rises as soon as D-marking rises. The use of the mode-implied subject-drop type b becomes marginal in the same period. Type c is really a side effect of D-marking and reference tracking, whereas situation-bound type b is not.

6. Conjecture: Type c pro-drop/agreement is late

My approach implies that full agreement follows D-marking. If that is true, I am forced to predict that Italian pro-drop is late, after D-marking. This is an empirical issue. Recent literature on the erratic use of person agreement (Grinstead 1998, Soares 2002, Avram and Coene 2004) suggests to me that the acquisition of non-emphatic subject pronouns in the Romance pro-drop languages may be late and not that different from non-emphatic pronouns in the acquisition of Germanic non-pro-drop languages. The early finite verb may have “agreement” in a fixed default form. Clitic pronouns offer a parallel. Clitic pronouns are a reduced type of free anaphors. Acquisition data in French, Romanian and Italian show how clitics appear *right after* D-marking (Van Kampen 2002/2004a, Avram 2003, Mueller and Kupisch 2004).

This suggests that little *pro/agr* in Italian *pro-drop* is part of discourse reference tracking as well. If this is true, the data should allow a reinterpretation of early *pro-drop*. The potential reanalysis should claim the two points in (27).

- (27) a. Early finite verbs without a subject that appear before systematic D-marking are fixed forms (type b, for example imperatives)
- b. Like object clitics, the regular use of full agreement and *pro-drop* will not appear at adult level before systematic D-marking

Real *pro-drop* would appear after D-marking.

Empirical support for (27)a and (27)b may be found in the direction of (28)a and (28)b.

- (28) The period before D-marking in *pro-drop* languages is characterized by
 - a. Absence of object clitics and erratic use of subject agreement
 - b. Correct finite forms that are type b: imperatives

The fact that object clitic pronouns appear right after D-marking has been attested for French by Van Kampen (2004a), for Romanian by Avram (2003), for Spanish by Munoz (2004), and for German-Italian bilingual children by Mueller and Kupish (2004). Since *pro-drop* and clitics rely on pronominal oppositions (person/number) function in discourse grammar, this may group them with all reference tracking elements, including *pro/agreement*.

The erratic use of person agreement has been attested for Spanish by Grinstead (1998: chap.4.4.2), for Portuguese by Soares (2002:table 7), and for Roumanian by Avram and Coene (2004:table 3). Avram and Coene (2004) claim as well that early ‘finite’ verbs in child Rumanian are non-adult like and that the *pro-drop* property appears later.

The use of correct imperatives in early Italian child language is reported in Salustri and Hyams (2003). In child Dutch, by contrast, the use of imperatives as type b predicates, i.e. before D-marking, are rather rare. This can be explained as follows. Next to imperatives of a lexical verb, the Dutch imperative equivalents are either a [modal verb + infinitive], or [*ga*<+imp> + infinitive]. Both appear in early child Dutch as Optional Infinitives (see appendix 3).

7. Conclusions

The reduction of functional categories in child language may fit Jakobson’s conjecture of universal feature-hierarchy for syntax. The I^0/C^0 marking of predicates precedes the D^0 marking of arguments.

Wexler’s Optional Infinitives fit into the order of acquisition steps. They are the counterpart of systematic I-/C-marking, but the relation with full Agreement in I^0 pursued in Schütze (1997) is highly doubtful. Full agreement is late. It follows D-marking and D-marking follows I-marking (finiteness) (Van Kampen 2004b). By consequence, Schütze and Wexler’s conjecture about double checking does not fit the major hierarchy of feature acquisition. The Optional Infinitives disappear well before the *Agr-checking* is possible at all. Rizzi’s Truncation is a different story. It has no uniform

effect, but it does not need to have one. It is an abstract principle and may fit the order of acquisition steps, if one makes the distinction between type a, b and c predicates.

- (29)
- a. Early situation-bound predicates appear before I-marking. They belong to early child language.
 - b. Dutch topic-drop (Spec,C) appears systematically after D-marking. It belongs to discourse grammar and depends on D-features for reference tracking in a context.
 - c. The same must hold for Italian pro-drop (Spec,I). It probably appears and rises after D-marking

Children seem well aware of the fact that some Tense/Agr systems (such as the Dutch one) allow a benign neglect, whereas others (such as the Italian one) do not. My conjecture (Van Kampen 1997) is that Optional Infinitives have after all no direct relation with the richness of the verbal paradigm. They are rather an effect of leaving out grammatical auxiliaries/modals. The decisive circumstance must be that more than 60% of the verbal predicates in the Dutch input are constructions with an auxiliary plus a non-finite lexical verb, or a bare non-finite lexical verb (see for details and percentages Evers and Van Kampen 2001). The initial intake of the Dutch child will be a set of lexical content predicates that are infinitival. By contrast, less than 20% of the Italian predicates are of that type. See for these percentages, appendix 1. The initial conjecture of the Italian child can be that lexical content predicates are based on some not yet decodable Agreement form. They simulate the form by means of a default without real Tense or phi-feature oppositions. It is only after the acquisition of phi-features on D-marking that the real truncation based on zero pronouns can come in. The brute input percentages (>60% versus <60%) are less sophisticated than the Unique Checking Constraint, but they must have some relevance.¹¹

8. Future research

The factual order of acquisition steps has to be established for typological variants. It has to be considered whether and how that order fits the present conjecture about the hierarchy of evidence frames. For instance, the present conjecture predicts that for VSO Irish, language acquisition will heavily depend on Optional Gerunds rather than on <+finite> forms, although Irish offers a pro-drop system for all predicates. I expect this because the VSO order is a root order (subordinates are SVO) like V2nd Dutch. The root I-to-C types Celtic VSO as well as Germanic V-second can be acquired only due to an input that contains >60% Aux-marked predicates.

¹¹ This does not mean that the acquisition procedure makes decisions on frequency alone. See for the idea that local evidence frames outweigh mere input frequency Evers & Van Kampen (2001) and Van Kampen & Evers (2004).

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Appendix 1: Input for types a-b-c (Dutch/Italian)

Italian: Diana's mother (Calambrone corpus) (with thanks to Manuela Pinto)

Dutch: Laura's mother (Kampen corpus)

Table (i) Verbs by types in Italian and Dutch (mother)
(100% = all verb types)

Type	<i>Italian</i>	<i>Dutch</i>
Vlex <-fin>	1.5 %	10 %
Aux/modal + Vlex<-fin>	13.5 %	34 %

Vlex<+fin> (imperative)	25 %	4%
Modal verb	--	10%

Copula (non-formulaic)	20 %	18 %
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Vlex<+fin>	40 %	24%
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The potential evidence frames for the verbal configurations in (i) are given in (ii)

Table (ii) Evidence frames (intake child) for type a, b and c
(100% = all verb types)

input mother	<i>Italian</i>	<i>Dutch</i>	intake=output child
Vlex<-fin>	1.5%	10%	type a bare V (Infinitive)
Aux/modal + Vlex<-fin>	13.5%	34%	type a bare V (Infinitive)

input (mother)	<i>Italian</i>	<i>Dutch</i>	intake=output child
Vlex<+fin> imperative	25%	4%	type b mode-implied
Modal verb	--	10%	type b mode-implied

input mother	<i>Italian</i>	<i>Dutch</i>	intake=output child
Vlex<+fin>	40%	24%	type b (?) mode-implied type c Vlex<+fin>

input mother	<i>Italian</i>	<i>Dutch</i>	intake=output child
Copula + N/A/P	20%	18%	type a bare N/A/P type b mode-implied

Appendix 2: Input for types a-b (Dutch/Italian)

The Dutch input presents lexical verbs as infinitives in 62% of the cases, the Italian input in 20% of the cases only.

Table (iii) Lexical verbs <+fin> and <-fin> in Italian and Dutch input (mother)
(100% = all lexical verbs)

<i>Italian</i> (Diana's mother)	<i>Dutch</i> (Laura's mother)
V<-fin> 20%	V<-fin> 62%
V<+fin> 80%	V<+fin> 38%

A certain percentage of the finite lexical verbs above constitute imperatives. The Italian input presents some 30% of all finite lexical verbs as imperatives, whereas the Dutch input does so in 5% of the cases only.

Table (iv) Imperatives in Italian and Dutch input (mother)
(100% = all lexical finite verbs)

<i>Italian</i> (Diana's mother)	<i>Dutch</i> (Laura's mother)
V<+fin>imp 31%	V<+fin>imp 5%

Appendix 3: Percentages for imperative type a-b (Dutch/Italian)

The low 5% finite lexical verbs to express imperative mood in Dutch is due to the fact that Dutch rather uses *gaan*/modal + V<-fin>. The use of a Vlex<+fin> as an imperative is in general considered to be quite impolite. Italian, by contrast, does use finite lexical verbs, see (1).

(1) Expressions of imperative mood

- a. Italian adult: Vlex<+fin> → type b in Italian child language
- b. Dutch adult: *gaan*/modal + Vlex<-fin> → type a in Dutch child language

The figures for the percentages in tables (iii) and (iv) are given in (2) and (3).

(2) *Italian* (Diana's mother, Calambrone corpus)

- Lexical verbs: 590 *of which*
- a. Lexical V<-fin>: 117 (20%) Imperative V<-fin>: 10 (2%)
 - b. Lexical V<+fin>: 473 (80%) Imperative V<+fin>: 182 (31%)

(3) *Dutch* (Laura's mother, Kampen corpus)

- Lexical verbs: 657 *of which*
- a. Lexical V<-fin>: 407 (62%) Imperative V<-fin>: 54+? (? %)
 - b. Lexical V<+fin>: 250 (38%) Imperative V<+fin>: 35 (5%)

The exact input percentage for the imperative V<-fin> cannot be calculated because Dutch uses a great number of non-imperative *moeten/gaan* + infinitive with imperative intention, as in (4)c,d.

(4) Dutch input for imperatives

- a. [Vlex<+fin> imp.mode + modal particle]
- b. [ga (*go*, mode-implied) + modal particle + Vlex<-fin>]
- c. [2nd pers. + *gaat* (*go*) + modal particle + Vlex<-fin>]
- d. [2nd pers. + *moet* (*must*) + modal particle + Vlex<-fin>]

Examples of the three input types are given in (5)

(5) Examples of (4)

- a. was even je handen
'wash just your hands'
- b. ga even je handen wassen
'go just your hands wash
- c. je gaat nu even je handen wassen
you go now just your hands wash
- d. je moet nu even je handen wassen
you must now just your hands wash