The acquisition of the standard EPP in Dutch and French[*] (pre-final version)

Abstract
The standard EPP (Extended Projection Principle) stands for the obligatory co-occurrence of a <+I>-head and its DP specifier as subject. In minimalist terms, <+I>-head carries a φ-feature set that requires the presence of the DP subject in Spec,I. Chomsky (@2001: p.6) contends that the <+I>-head will only have the EPP-effect when it is φ-complete, i.e. when it carries a complete set of person/number features.

The subject obligation for <+I>-marked predicates is a high-ranking candidate for Universal Grammar. As such, one might expect that the EPP will guide the child's grammar acquisition program. In this paper, I will argue that this is nevertheless unlikely. The full EPP is the outcome of the acquisition program, rather than its source. A longitudinal analysis of Dutch and French child language shows how the subject-requirement is well-established before the systematic appearance of φ-features. This leads to the conclusion that licensing morphology, for example φ-agreement, follows. It may underline a principle, but should not define it.

1. Introduction.
Throughout this paper, I will apply to the 'Extended Projection Principle' (EPP) the notion 'acquisition'/'learning'. This may strike some people as a bit odd for the following reason. The standard EPP in generative grammar must be any grammatical arrangement that serves to guarantee that a predicate is "anchored", due to the presence of a subject (Chomsky 1981, 2001).

The subject obligation for all (or most) predicates is a high-ranking candidate for universal grammar (UG). As such, Chomsky's view on the matter implies that the EPP must be part of an inborn a priori frame. The EPP will guide the child's acquisition program rather than being the outcome of such a program. The notion 'learning' does not apply to an a priori guidance system. The EPP, as UG principles in general, is not supposed to be something that the child will discover and learn when he is confronted with language specific facts. I am aware of the dominant philosophy, but the longitudinal analyses of Dutch and French child language show in my view something that is indisputable close to an acquisition of the EPP. The acquisition of I-marked predication coincides indeed with the presence of an explicit subject, but the φ-feature requirement of the EPP does not appear until much later. This reverses the idea in Chomsky (@2001: p.6). It is not true that the <+I>-head will only have an EPP-effect when it is φ-complete, i.e. when it carries a complete set of person/number features. Rather, the full set of φ-features on I^o becomes learnable due to the EPP.[1]

I will argue that the EPP in child language appears in 4 acquisition steps. Section 2 will first make a distinction between proto-operator predicates and EPP predicates. The

[1] Radford & Ramos (2001) also turn around Chomsky's idea that the EPP needs a complete set of φ-features. They base their arguments on data from an Englsih speaking child with Specific Language Impairment. Platzack (2002) discusses the acquisition of the EPP in Swedish normal/SLI child language.

EPP predicates eventually supplant the proto-operator predicates by introducing personal subject pronouns. The order of acquisition steps towards a full EPP is born out by the longitudinal graphs in section 3. It will be shown that φ-features on the subject and their repetition on the verb are the last acquired EPP properties. Section 4 observes that the speed of these two last steps in the acquisition of the EPP is much higher. The difference in speed will be explained by the notion *evidence frame*.

2. Steps in the acquisition of the EPP

In general, the same UG device is mastered quickly in some grammatical systems and far more slowly in others. A good example of slow acquisition is the EPP in Dutch and French, both non-pro-drop languages. Longitudinal graphs from Dutch and French child language show that children realize this EPP in 4 successive steps.

(1)   a. Step 1: I-marking on the predicate and early EPP
      b. Step 2: D-marking on the subject and free anaphors (pronouns/clitics)
      c. Step 3: φ-oppositions on D^o and dummy subjects
      d. Step 4: AGR on I^o (the finite verb)

By I-marking, I mean the marking of a predicate by a factor <+I>. This factor generalizes over a variety of devices {copula, auxiliary, modal, finite morphology}.[2] By D-marking, I mean the marking of arguments by a factor <+D>. This factor also generalizes over a variety of devices {article, demonstrative, possessor, quantifier}.

The longitudinal graphs for I-marking and D-marking demonstrate how UG devices 'fade-in'. They are acquired over time. Their language specific realization rises under pressure of input. Moreover, the basic grammatical devices appear in a certain predetermined order and with a certain predetermined speed. This is a kind of cumulative learning and its successive steps can be tracked down, as I will show now.

2.0 The early EPP

At first EPP satisfaction depends on <+fin> marking only. The EPP formula in (2) accounts for that situation.

(2)   *Early EPP*
      I^o<+fin> marked predicate   <==>   (<+D> marked) subject in Spec,I^o

The formulation for the early EPP contains the bracketed phrase: (<+D> marked). It abstracts away from the systematic D-marking of the subject. The reason is that systematic D-marking is not present yet in the child's utterances (step 2). Neither are present the φ-features for person {first, second, third} and number {singular, plural} (step 3). These φ-features do not appear consistently in child language until the EPP is already manifest for some time. The formulation in (2) also disregards the mention of any morphological agreement between I-marking on the predicate and D-marking on the

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[2] This view on I-marking implies that an account of the <−fin> utterances in early child language must include verbal predicates, Root Infinitives, as well as non-verbal predicates like *daddy nice /bear in (the) zoo*. See Van Kampen (1997: 36) for this generalization.

subject (step 4). This has the same reason. Such phenomena as φ-features and agreement in person and number come in afterwards due to the early EPP rather than the other way around. At least in French and Dutch child language which I will consider here.

Since the presence of the EPP is dependent on the acquisition of highly language specific marking, summarized as <+fin>, it would be hard to deny that the EPP in its language-specific guise is acquired. Once the acquisition of the EPP in its language-specific form is recognized as an acquisition step, one can see how the EPP supports subsequent steps, but if the EPP had been present all along in some unexpressed abstract UG form, the factual order of learning steps remains unexplained.

By taking a narrow orientation towards the overt facts in child language I come to disagree with the interpretation of others. For example, Hoekstra & Hyams (1998) have argued that the disappearance of root infinitives in non-pro-drop languages like Dutch and French is due to the perception of a feature <number> that is shared by the predicate, say I^o<+fin>, and the subject, say <+D^o>. This unifying perception would enable the learner to see both markings, the <+I, number> marking of the predicate and the <+D, number> marking of the subject as part of the same and obligatory "anchoring" device for utterances <+I, tense>. The acquisition of the number-agreement chain would guarantee simultaneity of subject-obligation, D-marking on the subject, I/tense-marking on the verb and the dismissal of root infinitives. Hoekstra & Hyams (1998) give a quantification to support the thesis that D-marking and I-marking appear simultaneously in non-pro-drop languages. A critical note in Van Kampen (2001: section 5.3) rejects the validity of that quantification. This note is added to the present paper as an appendix.

In order to clarify my own dissenting view, I will show how the acquisition of the EPP in 4 steps largely disregards <number>, but is supported by longitudinal graphs. The 4-step analysis underlines at the same time my point that UG-properties are mastered by an input-controlled procedure that is clearly responsive to all kinds of language specific circumstances.

2.1 Early EPP and mode-implied subjects

According to the formulation of the early EPP in (2), the acquisition of I-marked predication coincides with the presence of an explicit subject. As is well known from the literature, there are also early I-markings that lack an explicit subject. I have argued (Van Kampen 1997, 2001, 2004a, 2004c) that these constitute a specific group of predicate proto-operators with a mode-implied subject.

(3) a. Inflection-marked predicate   ⇒   explicit subject
     b. Operator-marked predicate   ⇒   mode-implied subject

The explicit subjects, (3)a, are the regular EPP case in adult language, but early child language is also characterized by the presence of the mode-implied subjects, (3)b. I will add examples of the mode-implied subjects and subsequently define their properties.

It is an underlying idea of the formulation in (2) that there are 'quasi I-marked' verbs. These lack an explicit subject and they only occur with certain verbs that function as predicate proto-operators. These predicate proto-operators pragmatically imply the presence of a specific person. For example, *wanna* is inherently 1st person, just like *veux*

in French child language or *kwi* in Dutch child language.[3] The modes for the predicate proto-operators are listed in (4).

(4)   Modes in early child language (Van Kampen 1997)
      a. wish/ability of the child   *intentional mode* (for 1st p.)
      b. command by the child   *imperative mode* (for 2nd p.)
      c. decision about naming/characterizing *constative mode* (for 3rd p.)

The predicate proto-operator doesn't have a syntactically expressed subject. Neither does it allow the lexical variations that a regular content verb admits to. Due to their lexically fixed form, one may identify the apparently subject-less utterances as marked by of situation-bound predicate operators. Operator isn't used here in the sense of 'bound by a sentence-internal variable'. It is a gesture-sustainable situation-bound operator. One might say that these proto-operators introduce the utterance with colons. *moet* in (5) initially means something like 'it has to be'; *is* means 'this is the situation'. See for more examples in Dutch child language (Van Kampen 2001), and for a different analysis Hoekstra & Jordens (1994), Jordens (2002).[4]

(5)   <u>Dutch Sarah</u>: predicate proto-operators with fixed mode-implied subjects

a.	*kwi* [vogel]	(I) wanna [bird]	1;9.10 / 93 weeks
	kwi [dit mooi]	(I) wanna [this beautiful]	2;01.17/107 weeks
	kan [liedje niet]	(I) can [song not]	2;0.17 /107 weeks
	hoefe niet [in bad]	(I) need-not [in bath]	2;0.17 /107 weeks
	mag wel [kleure(n)]?	(I) may-indeed [color]	2;2.18 /116 weeks
b.	*doe* [oge(n) dich(t)]	(you) do [eyes close]	1;10.13 /97 weeks
c.	*is* [beer]	(that) is [bear]	often
	is [niet tekenen]	(that) is [not (to) draw]	2;0.17/107 weeks
	moet [zo]	(it) must [that way]	2;1.10/110 weeks
	moet [liedje aan]	(it) must [bird eat]	2;3.13 (diary)

The same phenomenon can also be seen in child French, see (6).

(6)   <u>French Grégoire</u>: predicate proto-operators with fixed mode-implied subjects

a.	*veux* [descendre]	(I) wanna go down	1;9.18 / 89 weeks
	sais pas (also adult French)	(I) don't know	often
	vais [assis sur la chaise]	(I) go sit on the chair	2;1.25 / 112 weeks
b.	*mets* [dedans]	(you) put therein/imp.	1;11.22 / 98 weeks
c.	*est* [ours]	(that) is (a) bear	often
	est [tombE]	(that) is falling/fallen	often

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[3] The distinction of mode-implied subjects has an empirical consequence. There is no subject-drop, unless there is an operator-marked predicate. Notice that the predicate operators are seen as functional, rather than as lexical items. Of course, 'topic-drop' will appear in Dutch child language with the acquisition of I-marking/V-second. See Van Kampen (1997: 89ff) for an analysis of topic-drop.
[4] The use of the proto-operators in (5) is comparable to well-known examples in child language: *that/this* in Radford (1990:75f), *niet* in Van Kampen (1987), *nee* and *kannie/manie* in Hoekstra & Jordens (1994), *more* and *no* in Powers & Lebeaux (1998). In Van Kampen (2001, to appear) I propose a generalization for these various proto-operators.

The properties of the modes are listed in (7).

(7)   *Properties of the modes.* Modes are
        a. fixed for person { 1st, 2nd, 3rd }
        b. lexically fixed for standard verbs
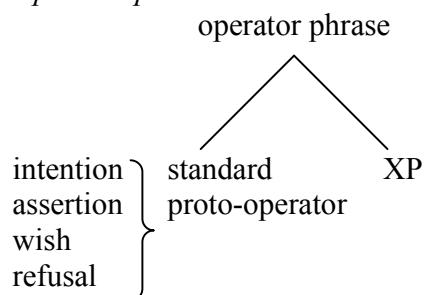   c. situation-bound

Unlike the EPP subjects, the mode-implied subject cannot vary in person, once the verbal operator is chosen. They are lexically fixed for standard verbs. One may speak of fixed proto-operators with 'mode-implied' subjects, because the <+finite> forms in these constructions are lexically restricted and highly frequent. They express major pragmatic oppositions in standard situations and they are gesture sustainable in a standard manner.

Previous descriptions of these child language constructions have argued two different points. Firstly, 'null subjects' would be supplied a priori by grammatical intuition (Sano & Hyams 1994, among others) and secondly, the overuse of null subjects in early child language would be due to discourse effects (Rizzi 1994, among others). My evidence from longitudinal graphs points in the opposite direction. There is no systematic quantitative evidence for null subjects in early child language, if we filter out predicate proto-operators. There is no access to discourse before step 2, that is before the introduction of D-marking (see also Van Kampen 2004a, 2004b).

(8)   *Early child language*
        a. No null subjects, if predicate proto-operators are filtered out
        b. No access to discourse before systematic D-marking

The proto-operator construction, and its mode-implied subject, eventually disappears from child language. This takes place as soon as step 1 and 2, systematic I-marking and D-marking, have been taken. That point marks the end of early child language. The <+/– person> pronouns (1st/2nd/3rd person and dummy subjects) start to appear in the adult fashion. That is, they appear with all verbs and in all argument positions. EPP predication takes over. As soon as the EPP reinterprets the proto-operator in (9)a as a <+fin> verb, the absent or cliticized subject pronouns are reinterpreted and articulated as Spec,I pronouns, see (9)b.

(9)   a. *Operator predication*   b. *EPP predication*
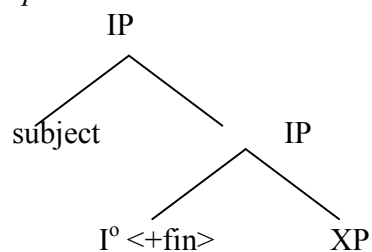
This reinterpretation suggests that oppositions of person or number play no crucial part in the definition of the EPP. This tallies well with the major facts in this paper, namely 1) explicit D-marking follows I-marking; 2) person/number oppositions do not appear before the final phase of D-marking. To my mind personal pronouns, dummy subjects and verbal agreement are not learnable before EPP and D-marking have been established.

3. The 4 EPP steps in Dutch and French
I will present here the longitudinal development of a Dutch child, Sarah, and a French child, Grégoire. The acquisition of the full-fledged EPP in Dutch and French shows indeed the 4 successive steps in (1), repeated in (10).

(10) a. Step 1: I-marking and early EPP
      b. Step 2: D-marking and free anaphors (pronouns/clitics)
      c. Step 3: φ-oppositions on D^o and dummy subjectsd.
      d. Step 4: AGR on I^o (the finite verb)

Initially, the EPP appears without tense, φ-features on I, or φ-features on D, see (11).[5]

(11) a. <+fin>, no <+tense> $\rightarrow$ since there is no <+/-past> opposition yet
      b. <+D>, no <+number> $\rightarrow$ since there is no <+/-plural> opposition yet
      c. <+D>, no <+person> $\rightarrow$ since there is no <1/2/3 person> opposition yet

The I-marked form is <+finite> only and opposes to the infinitive and participles. It is not yet marked for <tense> since there is not an opposition past/present yet. Nor is the early <+finite> form in non-pro-drop languages marked for person or number oppositions. The subject is not yet a grammatical singular, since there is no opposition to a plural. The subject is not yet a grammatical 3rd person, since there is no systematic opposition to 1st and 2nd person. A longitudinal analysis will show that 1st, 2nd and 3rd personal pronouns do not appear with some consistency until after the I-marking on the predicate and the early EPP have been established.

   My main point is a reduction of child language by means of De Saussure's "Il n'y a rien que des oppositions". I propose, contra "full competence", that empty categories or implied features are no tools in early child language. They exist only as final parts of a full paradigm. And it is the explicit paradigm that has to be acquired first. The full paradigm cannot be present in early child language by means of some inborn UG, since full paradigms are language specific. As soon as one sees how crucial it is to have language specific points of orientation, the child's acquisition of EPP in 4 ordered steps begins to make sense. UG devices, like the EPP, are discovered and learned in a stepwise fashion. They appear as parts of a paradigm and they are acquired under the pressure of language specific input. The poverty of the stimulus no longer holds if one realizes how limited and repetitive the patterns are that control the early acquisition procedure. Potential counterevidence is simply beyond the child's observation space.

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[5] In the files of Dutch Sarah, the first past tense and the first perfect tense appears at week 123, that is right after she acquired I-marking, see the graph in (12).

3.0 First step: I-marking and early EPP

Dutch and French clauses are to be headed by a finite verb. A count of the utterances marked by a finite verb in longitudinal files of mother-child conversations show the rising percentage of I-marking.[6] This rising percentage can be translated into longitudinal graphs. The graphs in (12)/(13) measure the rising percentages of verbal and non-verbal predicates marked by <+fin> in the corpora of Sarah and Grégoire. I take it that the child has acquired systematic marking if she realizes > 80% of the adult norm.[7]

(12)   Dutch Sarah: Acquisition of I-marking
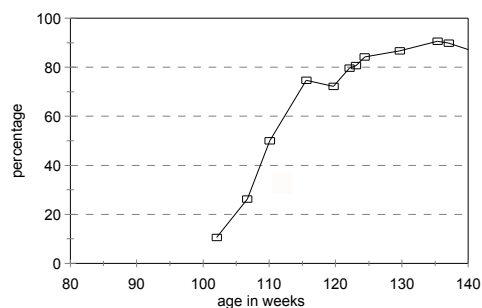
(13)   French Grégoire: Acquisition of I-marking
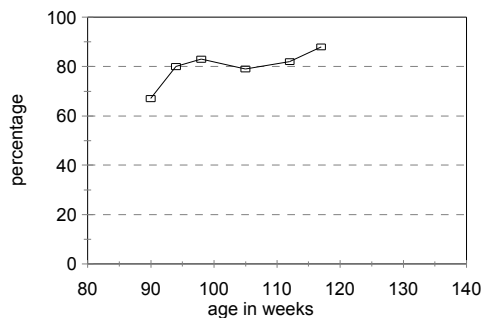
The graphs in (12) and (13) not only establish the rise of I-marking, but also the obligatory presence of the explicit subject, defined here as 'early EPP'. The rise of I-marking coincides globally with the rise of lexical subjects (see longitudinal graphs by Haegeman 1996 for Dutch and De Cat 2002 for French). Since D-marking has not been acquired yet, the subject is still lacking D-marking most of the time. The subject argument in Dutch is realized at first in situation-bound contexts by a proper or a quasi proper name, or by a demonstrative, see for an elaboration Van Kampen (2004a).

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[6] I restrict counting I-marking and D-marking in ≥ two-word utterances. Utterances based on a single word were disregarded. The reason is that I aim for (overt) syntax-based evidence.

[7] I take 10% within the adult norm as the point of acquisition. Since not all all sentences are I-marked in the target language, and not all nouns are D-marked in obligatory contexts, I assume that the child that crosses the 80% line is within 10% of the adult norm.

(14)   The 'early EPP' subject
        a. is not marked for reference yet (it is not D-marked)
        b. therefore it is situation-bound: a quasi proper name or demonstrative

One may say that I-marking coincides with the early EPP as defined in (2). The appearance of the I-marked predicate coincides with the appearance of the subject in the Specifier position, but one should abstract away from D-marking on nouns. We will see now that D-marking is the subsequent step.

3.1 I-marking precedes D-marking

NPs in adult Dutch and French are to be marked by an article or some other D-element.[8] Again, it is possible to get the percentage of D-marked NPs, and again we get a rising percentage in Dutch as well as in French. The longitudinal graphs for D-marking in (15) and (16) measure the percentages of NPs that are marked by a determiner in the files of Sarah and Grégoire. In both cases, we can see how the D-graph does not start its rise before the I-graph has crossed the 80% acquisition line. See also Avram & Coene (2004) for the order I-marking > D-marking in the acquisition of Rumanian.

(15)   Dutch Sarah: Acquisition of I-marking and D-marking
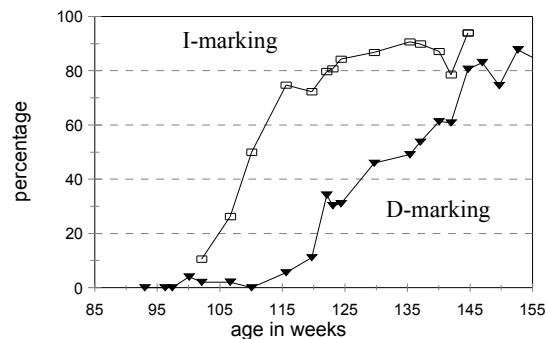
(16)   French Grégoire: Acquisition of I-marking and D-marking

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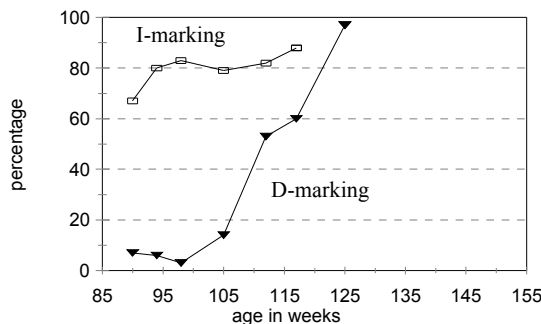
[8] In French, the use of a D^o is obligatory with nouns. In Dutch, the use of a D^o is obligatory with singular count nouns and with definite plural nouns. The D^o system in Dutch makes use of zero signs for mass nouns, for proper nouns, for indefinite plurals and for idioms. Further differences starting point of the acquisition graph for D-marking between the various languages (Dutch, French and Spanish/Italian) are elaborated in terms of feature oppositions in my current work (Van Kampen in prep.).

Sarah has acquired I-marking at week 120 and D-marking at week 145. Grégoire has acquired I-marking at week 94 and D-marking at week 125. Grégoire's I-marking is almost instantaneous (>80% at 1;10.20). The appropriate placement of the finite verb in V-second Dutch is a more intricate affair than the acquisition of the finite verb in SVO French. See Evers & Van Kampen (2001) and Blom (2003) for an extensive and quantified analysis.

The fact that I-marking appears before D-marking in both Dutch and French hides a deep problem. D-marking has a higher frequency in the input than I-marking. Yet, children in various languages start to analyze predicate-argument structure by I-marking. Nor is the acquisition order anticipated by any present syntactic theory, as far as I can see. For a procedure that derives I-marking before D-marking, see Van Kampen & Evers (2004).

3.2 Second step: D-marking and free anaphors

The acquisition of D-marking on nouns coincides with the acquisition of free anaphors in Dutch. See the graphs for Sarah in (17).[9] By contrast, free anaphors in French come in after the acquisition of D-marking, as will be shown for Grégoire below. This must be due to the clitic status of free anaphors in French. See Jakubowicz & Nash (2002) for the claim that this holds for object clitics and Van Kampen (2004a: (12)) for the claim that this holds as well for subject clitics in as far as these are not 'shadow' (resumptive) pronouns.

(17)   Dutch Sarah: Acquisition of D-marking and free anaphors
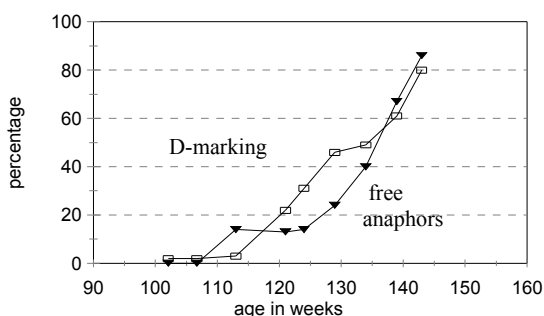
It has been observed by Postal (1966) that the definite marking of NPs is parallel to the use of free anaphors, in form as well as in identifying function. Postal's point of view is confirmed by the graphs for the acquisition of D-marking of nouns and free anaphors. The two graphs show a common rise for Dutch Sarah. This constitutes a striking support for the claim that D-marking is a matter of argument identification rather than some <+Noun>-extension. Williams (1994) argues that there is a close relation between the grammatical theta/case marking of arguments and deictic signs for referentiality. We may look at the D-graphs as the child's getting the point of Williams (1994). D-marking appears to be a matter of argument marking indeed. The arguments can be represented by <+D> pronouns or by <+D>-marked Noun phrases.

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[9] For the free anaphors, the ratio DP<+pro> / DP<+/–pro> for Sarah is measured against the ratio for her adult conversation partner (the mother). By free anaphors I mean full, weak or clitic pronouns (as opposed to bound reflexives).

3.3 Third step: φ-oppositions on subject and dummy subjects

It is only at the later stage of the acquisition of D-marking that <+plural> (<number>) marking appears on the subject. However, the plural subjects do not immediately give rise to <+plural> specification on the finite verb, as you may see in (18) and (19). Late acquisition of agreement has also been reported by Ferdinand (1996), Schütze (1997), Avram & Coene (2003).

(18)   Sarah: D-marking   week 130-135
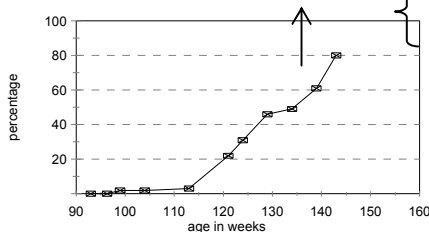
At week 130-135: -   D<+plural> (12)   { I<+sing> (**7 wrong**)
                                           I<+plural> (5 right)

(19)   Grégoire: D-marking   week 127
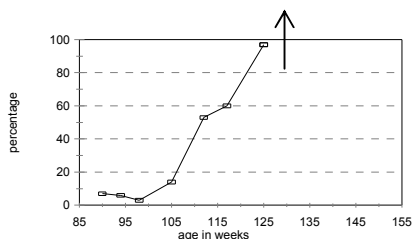
At week 127: -   D<+plural> (11)   { I<+sing> (**9 wrong**)
                                           I<+plural> (2 right)

-    first appearance of *je*/*tu*
-    first appearance of impersonal *il*
-    first appearance of clitic free anaphors

Examples of agreement errors are given in (20)

(20)   a.   les hommes   a   un zizi   (Grégoire, week 127)
            the men   have<+sing>   a willie

       b.   woont   er   mensen   in?   (Sarah week 133)
            live<+sing>   there people   in?

French Grégoire did not use with consistency the <+person> pronouns *je* and *tu* and the <−person> pronoun for dummy subjects before week 127, see also the figures in Hamann et al. (1996: table 4). First and second person were at first taken care of by the subject implying modes. The systematic use of the Dutch dummy subject is late too. It is a step 3

affaire, as it is in French.The Dutch personal pronouns, by contrast, come earlier. They do not force, like the French a choice between clitic or emphatic, and they appear for Sarah during step 2.

The personal pronouns in French are clitics. They imply the acquisition of a different construction in addition to the pronominalization. Let me elaborate this point. The position of full-sized arguments establishes Baker's UTAH (Theta Assignment Hypothesis, Baker 1988:46f). The UTAH holds that theta roles select a linearly fixed X-bar configuration for the theta-assigning verb and its theta-carrying argument. The UTAH offers an evidence frame for the subsequent acquisition of clitic arguments in French. This plausibly causes the acquisition difference between the French clitic and non-clitic constituents. It explains as well that the Dutch non-clitic anaphors are part of step 2 (D-marking), whereas the French clitic pronouns follow step 2 (D-marking and UTAH). UTAH is not presupposed in the present view. It is acquired for each content verb separately as the associated reference set (cf. also Lebeaux 1988:13). The parallel between the lexical items is imposed by the input. Parallelism fits human memory for traffic signs, playing cards, tramway schedules, and even grammar.

3.4 Fourth step: Agreement between subject and finite verb

Sarah's finite verbs start showing the correct agreement with the plural subject only 5 weeks after the acquisition of φ-oppositions on the D-marked subject, as may be seen from the figures in (21). Grégoire's recordings stop two weeks after step 3. So, the evidence is a bit meager. But at this last recording, Grégoire had 4 distinguishable plural subjects of which only 1 did not show correct agreement on the finite verb.

(21) a. Sarah, week 140-142: D<+plural (13) → I<+plural> (13 right)
      b. Grégoire, week 129: D<+plural (4) → I<+plural> (3 right)

D<+plural → I<+plural> (AGR)

	Sarah	Grégoire
D<number>	week 135	week 127
I<number>	week 140 ↓	week 129? ↓

The φ-feature agreement between subject and predicate is the last phenomenon to appear. Moreover it appears with mistakes. It is only at the end of the D-graph that Sarah's finite verbs show the correct agreement with the plural subject. It seems likely that agreement is acquired due to the EPP rather than the other way around. The more problematic agreement with indefinite subjects and a dummy element in Spec,I are at first not relevant in early child language.

4. Speed of acquisition and evidence frames

The acquisition of the full-fledged EPP shows the same 4 successive steps for Dutch Sarah and French Grégoire. Both Sarah and Grégoire apply systematic I-marking almost half a year earlier than systematic D-marking. And both acquire φ-oppositions on the subject before the finite verb starts showing correct agreement.The succession of the acquisition steps also shows the same relative speed. Sarah's and Grégoire's steps 3 and 4 have roughly a 5-fold higher speed than their steps 1 and 2, see (22) for Sarah.
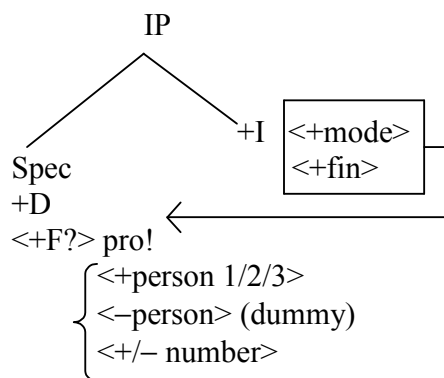
(22)   Dutch Sarah: *EPP evidence frame*

I-marking	D-marking	D$_{<+\varphi>}$	I$_{<AGR>}$
20 weeks	25 weeks	?	5 weeks
step 1	step 2	step 3	step 4

The 5-fold higher speed of steps 3 and 4 can be made plausible. I propose that after step 1 and step 2, the EPP operates as an evidence frame. The input has not been lacking in φ-features on I and D, rather the φ-features could not become part of the intake before I and D had been established. After the acquisition of I-marking and D-marking the EPP is a fixed Specifier-Head frame. The φ-features are added within that extended frame. It appears that evidence frames outweigh mere input frequency.
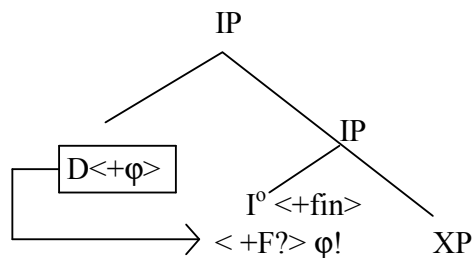
4.0 The EPP as evidence frame
The very reinterpretation of the predicate proto-operators (for modes like {intention, assertion, wish, refusal}) as <+fin> verbs triggers the EPP frame for (nearly) all predicates. A second effect of the EPP is the successful identification of φ-features.The evidence for the unidentified φ-features in Spec, I applies to the left, from head I^o to the Spec, I, see (23)

(23)   EPP as evidence frame to the left

```
                IP
               /  \
              /    +I  ┌─────────┐
           Spec        │ <+mode> │
           +D          │ <+fin>  │
           <+F?> pro!  └─────────┘
                  ⎧ <+person 1/2/3>
                  ⎨ <−person> (dummy)
                  ⎩ <+/− number>
```

The <+F?> stands for an as yet unidentified functional category. The <pro!> stands for the eureka learning pointThe EPP as an evidence frame also guides the learner towards the φ-agreement on the finite verb I^o, see (24). AGR on I^o follows from φ-oppositions on the subject and it follows the acquisition of systematic D-marking.

(24)   EPP as evidence frame to the right

$$\text{IP}$$

The <+F?> stands for an as yet unidentified marking on I^o. The <φ!> stands for the eureka learning pointThe longitudinal picture shows an important consequence of the EPP as an evidence frame. Impersonal subjects in non-pro-drop languages follow the EPP and its systematic I-marking and D-marking. The impersonal subjects appear fairly late and simultaneously with the full use of personal pronouns in step 3. The present longitudinal analysis opposes to Hyams (1986) claim that empty subjects are a starting point and that dummy subjects will guide the child towards the EPP acquisition as <+/-pro-drop>.[10]

Conclusion

I-marking precedes D-marking and systematic D-marking precedes the appearance of plural marking. The EPP, finally, is well-established before the appearance of any such φ-features as <person> and <number> on the finite verb in non-pro-drop languages. This leads up to a challenge of minimalist thinking about the EPP. Chomsky (2001:@ p.6) contends that the <+I> will only have the EPP-effect when it is φ-complete. However, the EPP is well-established in child language before the appearance of φ-features on the finite verb. Why or when should these features develop into a major mechanism ever if they do not appear systematically before the show is over? There can be no doubt though that the EPP is learned as specifier co-occurring with the I-marking of predicates. The φ-features become identifiable thereafter.

   The picture of I-marking/EPP and D-marking/UTAH in child language runs fine without any morphological trigger. D-marking and I-marking are both deictic devices. They are interpretable quite well as they 'singularize' or 'instantiate' semantic content elements as events, respectively things. The <+fin> marker has been acquired before the introduction of a tense opposition. It signals in early child language that the predicate is 'anchored', that is singularized and applicable to some saliency aspect of the situation. This includes a reference to the subject argument in a fixed <subject>-<+fin> configuration. The D-marking is deictic as well. It singularizes θ-carrying arguments as points of reference, but it does so well before the introduction of a singular/plural opposition.

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[10] See Van Kampen (2004c) for a parallel analysis of the EPP in pro-drop languages.

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APPENDIX

Number specification

Hoekstra & Hyams (1998) propose a common source for the acquisition of D^o as well as I^o. Number specification would be the underlying core distinction. The graphs in (26) show that this is not supported by the facts (see also Van Kampen 2001).

Hoekstra & Hyams (1998) counted the occurrences of bare noun subjects versus the occurrences of specified DPs in both utterances with a <−fin> V and utterances with a <+fin> V for two Dutch children aged 2;3-3;1 (Hein) and 2;7-3;2.13 (Niek). See the reproduction of their table 13 in (I).

(I) Distribution of overt subjects for Niek and Hein (Hoekstra & Hyams 1998: table 13)

a	b	Number of occurrences			percentages		h
		c	d	e	f	g	
		V<−fin>	V<+fin>	Total	V<−fin>	V<+fin>	**total**
specified DP	overt D^o – N	4	382	386	1% (4/386)	99% (382/386)	**100%**
	plural marking on N	2	180	182	1% (2/182)	99% (180/182)	**100%**
	pronoun	169	4.407	4.576	4% (169/4576)	96% (4407/4576)	**100%**
unspec. DP	bare N	28	423	451	6% (28/451)	94% (423/451)	**100%**

The differences in percentages in (I)f versus (I)g are so striking as to become suspicious. A somewhat closer look reveals that the differences are due to biased choices in <u>sample</u> as well as biased choices in selection <u>period</u>. Adding up the numbers in column (I)c yields 203 <−fin> constructions. Adding up the numbers in column (I)d yields 5.392 <+fin> constructions. As far as the biased choice of <u>sample</u> is concerned, the sample is overwhelmingly <+fin>. Hence, it makes no sense at all to ask with Hoekstra & Hyams what support D^o categories may have given to the rise of the <−fin>/<+fin> distinction, since the sample is overwhelmingly <+fin> anyway. The answer can have no relevance to D-marking relations whatsoever. Even if a precocious child had almost all its D-marking in the V<−fin> utterances according to the adult norm from the beginning on, and had come up with, let's say, 30 cases of overt D^o, instead of the present 4 (26 more), reducing his present unspecified DP from 28 to 2 (26 less) (see column (I)c), he would still get bad marks from Hoekstra & Hyams: some meager 7% (30/412 (=382+30)) as compared to the 93% (382/412) of the <+fin> constructions.

It may seem to make more sense to ask for the distribution of the four D-constructions in early <−fin> and <+fin> sentences, see the recalculation in (II). The picture at least changes completely.

(II) Recalculation of the table in (I)

a	b	Number of occurrences		Percentages	
		c	d	e	f
		V<−fin>	V<+fin>	V<−fin>	V<+fin>
specified DP	overt D^o – N	4	382	2% (4/203)	7% (382/5392)
	plural marking on N	2	180	1% (2/203)	3% (180/5392)
	pronoun	169	4.407	83% (169/203)	82% (4407/5392)
unspec. DP	bare N	28	423	14% (28/203)	8% (423/5392)
	total	203	5.392	**100%**	**100%**

As one can see in column (II)e, the unspecified DP in <−fin>V sentences holds some ground (14%). This keeps the overt D^o (2%) and the plural marking (1%) lower than the corresponding percentages (7% and 3%) in the <+fin> sentences of (II)f. Yet, that is not relevant either. The <u>period</u> is still biased. If one extends the period for selection of construction, say from the second to the twenty-first birthday, the percentages for grammatical N-marking will become indiscernible from the percentages in the adult language for <−fin> as well as for <+fin> constructions. This only shows there is a period of adult full competence. If, by contrast, the period is shortened and only alternations before two and a half year are selected, than undoubtedly the percentage of unmarked N will grow and D-marking will be lower. This shows that there is an acquisition period of N-marking, but little more. If one really wants to be informed about the relation between D-marking and I-marking, there is no alternative but to construct longitudinal graphs for individual children.

An expectation along the lines of Hoekstra & Hyams might have been that D-insertion with nouns is acquired along with Spec-$V_{<+agr>}$ constructions. Baauw, De Roo & Avrutin (2002) looked at this correlation in the development of two Dutch children. They divided the acquisition of <+fin> marking in three periods: 1st period of <30% <+fin>; 2nd period of 50% <+fin>; and 3rd period of >70% <+fin>. As anticipated by the graphs in (15) of this paper, there was no clear correlation between I^o<+fin> and D^o<+det>. The two children showed a preference for D^o<+det> in I^o<+fin> utterances in the last period (>70% <+fin> marking) only. My own counts, below in (III), do not reveal such a preference. The effect is not particularly striking either way, and I think the measurement variations are due to random noise.

(III) Dutch Sarah: Percentages of D-marking in <+fin> and <−fin> utterances

age in weeks	<−Vfin>		<+Vfin>	
100-102	4/66	6%	0/8	0%
107-110	1/69	1%	0/12	0%
116-120	3/34	9%	3/38	8%
122-123	6/35	17%	21/55	38%
125-129	21/40	53%	62/148	42%
132-136	11/19	58%	52/103	50%
137-140	16/21	76%	44/78	56%
142-145	17/24	71%	110/149	74%
147-150	18/21	86%	44/57	77%
153-159	15/16	94%	81/101	80%

In short, the quantitative argument by Hoekstra & Hyams is invalidated by elementary mistakes in the selection of data. Their research interest as such was nevertheless a very interesting one. As I see it, they wondered whether licensing by Spec-head agreement plays a demonstrable part in the acquisition of I^o<+fin> and D^o<+det>/<+pro>. To put it somewhat informally, are the PF reflections of argument licensing in child language an adornment added later on or is it the very core issue of grammar? My guess would be 'an adornment added later on'. I tend to see I^o and D^o as autonomous deictic markers of predication and reference that come in to construct discourse cohesion. They may pick up their later syntactic function as well, after some fine-tuning. Real morphological agreement and Case-marking will be acquired later on.