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**Young Children Are Frozen:  
Reflexive Clitics and the Universal Freezing Hypothesis**

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### *Abstract*

Here we present new evidence of children's early success at reflexive-clitic constructions in Italian and French. This success is surprising because the reflexive-clitic construction shares a number of syntactic characteristics with the English verbal passive, which is acquired much later. We propose a new analysis of children's difficulties with the passive, the Universal Freezing Hypothesis, based on the "smuggling" approach to English passives developed in Collins 2005a. The UFH correctly distinguishes between English passives and Romance reflexive clitics.

#### 1. Background

In children acquiring English, clear, unequivocal verbal passives are not reliably present until after age 4;0 (Bever 1970, Horgan 1976, Maratsos et al. 1985, de Villiers and de Villiers 1985, Borer and Wexler 1987, Meints 1999). A dissenting view can be found in recent work of O'Brien, Grolla and Lillo-Martin (2006), but for present purposes we will assume that the verbal passive poses genuine difficulties even for relatively old English-speaking children. Passives are also late in children acquiring German (Mills 1985, Abbot-Smith and Behrens 2005), Dutch (Verrips 1996), Japanese (Sugisaki 1997, Murasugi 2000) and Serbian (Djurkovic 2005). Much earlier acquisition of verbal passives has been claimed for Sesotho (Demuth 1987), Inuktitut (Allen and Crago 1996) and Kiché (Pye and Poz 1998), but the evidence is controversial (Crawford 2004, Johns 1992, Hyams et al., to appear).

Borer and Wexler (1987, 1992) advanced a maturational account, the A-Chain Deficit Hypothesis (ACDH), to explain children's difficulties with the verbal passive. According to the ACDH, young children before about four years of age lack the ability to represent (nontrivial) A-chains. This account capitalized on widespread agreement that verbal passives require A-chain formation. Yet, the VP-internal subject hypothesis presented a problem for the ACDH: Children's early success at raising the subject to a VP-external position forced a distinction between "trivial" and "nontrivial" A-chains.

Babyoneshev et al. (2001) later proposed the External Argument Requirement Hypothesis (EARH), which avoided the trivial/nontrivial distinction. According to EARH, young children disallow any clause in which there is no external theta-role assigned to Spec of v. Following Baker, Johnson and Roberts 1989, the external theta-role of a passive was taken to be assigned to an  $X^0$  rather than an XP. Hence, Spec of v received an external theta-role in the active but not the passive.

One problem for this approach, however, was observed by Wexler (2002:4), who reported that relatively young children understand the following sentence-type: <sup>1</sup>

(1) It seems to Ernie that Bert is wearing a hat.

In (1), the verb *seems* does not assign an external theta-role to Spec of v, yet this does not appear to create any special difficulties for the child.

More recently Wexler (2002, 2004) has proposed a new approach based on what he terms the Universal Phase Requirement (UPR), given in (2):

(2) For the immature child (until about age five), v *always* defines a strong phase.

In order for this approach to account for children's difficulties with verbal passives, a number of syntactic assumptions are needed. Wexler adopts the specific version of Phase Theory developed in Chomsky 1999. The central idea is the Phase Impenetrability Condition (PIC) given in (3).

(3) The complement of a phasal head H is inaccessible to operations outside HP.

In the system of Chomsky 1999 there are two phasal categories: C (when T is non-defective) and non-defective v. Passive and unaccusative vP's are "defective" phases, and hence never interfere with the raising of a VP-internal DP to Spec of T. Crucially for Wexler, a vP is present even when no external theta-role is assigned, and movement to Spec of v is possible only if v has an EPP feature. This EPP feature is available only if movement out of vP would have an "interpretive" effect, as is the case with *wh*-movement, for example.

The consequence of these syntactic assumptions, in combination with the UPR in (2), is that verbal passives are maturationally delayed. For the immature child, the v that selects a passive VP is the head of a strong phase. As a result, the direct object DP within VP is inaccessible to T. The DP can become accessible if it raises to Spec of v, but this movement is possible only if v has an EPP feature, and v can have an EPP feature only if movement of the DP out of vP would have an interpretive consequence. In the usual case this movement would have no interpretive effect, and therefore DP remains inaccessible to T. The featural requirements of T remain unsatisfied, and the derivation crashes.

The advantages of the UPR over earlier approaches include the following: Unlike the ACDH, the UPR avoids the somewhat arbitrary distinction between trivial and

nontrivial A-chains needed to explain why raising a VP-internal subject is not problematic for children. On the UPR account, the VP-internal subject position, Spec of vP, is on the “edge” of the phase and hence the PIC does not prevent its movement to surface-subject position. And unlike the EARH, the UPR correctly predicts that sentences like (1) will be unproblematic. It is only when a DP must undergo movement out of vP that UPR predicts a problem.<sup>2</sup>

## 2. Test Case: Reflexive Clitics in Romance

An important test case for the UPR is provided by reflexive-clitic constructions in Romance, which have been argued to be similar to the English verbal passive in important ways. Marantz (1984) argues that the HAVE/BE alternation in (4a,b) (for French) reflects the unaccusativity of (4b).

- (4) a. Je l' ai lavé.  
I it have washed  
'I washed it.'
- b. Je me suis lavé t.  
I me am washed  
'I washed myself.'
- c. Je suis parti t.  
I am left  
'I left.'

The surface subject *Je* in (4b) is an underlying direct object that raises into subject position. According to Marantz, an abstract reflexive morpheme renders the predicate reflexive, and triggers the presence of a reflexive clitic (*me*) as a form of agreement. The choice of BE as the past auxiliary is a reflex of unaccusativity, similar to the use of BE

with the unaccusative verb *partir* in (4c).<sup>3</sup> In this section we review some of the evidence for Marantz's approach, and then test the resulting predictions of the UPR.

## 2.1 Supporting Evidence

Perhaps the most surprising part of the unaccusative analysis of reflexives is the idea that the verb in examples such as (4b) is actually intransitive. Marantz (1984:160) draws on Grimshaw 1982 for striking evidence to support this claim. In the French *faire*-causative, the embedded subject is preceded by *à* if and only if the verb in the embedded clause is transitive (5-6).

- (5) Il fera boire un peu de vin {à son enfant, \*son enfant}.  
 he make-FUT drink a little of wine {at his child, his child}  
 'He will make his child drink a little wine.'
- (6) J'ai fait partir {Jean, \*à Jean}.  
 I'PAST make leave {John, at John}  
 'I made John leave.'

When the embedded clause contains a non-reflexive object clitic, it patterns with the transitive clause in (5) and requires *à* (or more precisely, *au* = *à* + *le*):

- (7) La crainte du scandale l'a fait tuer {au juge, \*le juge}.  
 the fear of-the scandal OBJclitic'PAST make kill {at-the judge, the judge}  
 'Fear of scandal made the judge kill him.'

When the embedded clause is reflexive, however, the embedded clause patterns with the intransitive in (6):

- (8) La crainte du scandale a fait se tuer {le frère du juge,  
 \*au frère du juge}.  
 the fear of-the scandal PAST make REFL kill {the brother of-the judge,  
 at-the brother of-the judge}  
 'Fear of scandal made the judge's brother kill himself.'

Therefore, contrary to initial appearances, the reflexive clitic (*se*) in (8) does not correspond to a direct object. Marantz argues that the surface subject of the reflexive-clitic construction is actually the underlying object, much as it is with the unaccusative verb in (6).

## 2.2 UPR Predicts Problems, but Young Children Succeed

On Marantz's analysis, the reflexive-clitic construction is like the English verbal passive in that it requires movement of a VP-internal DP to surface-subject position. The UPR (like the ACDH) therefore predicts that immature children will experience difficulties with Romance reflexive clitics. Presumably such children will be forced to adopt a non-adult syntax in which the reflexive clitic is directly parallel to the non-reflexive object clitic, and in which the surface subject is also the underlying subject. (See Borer and Wexler 1987, Babyoneshev et al. 2001 for the corresponding predictions that immature children will misanalyze simple unaccusative verbs as unergatives, and will misanalyze verbal passives as adjectival passives.) This non-adult syntax will avoid problems with the UPR because the surface subject originates in Spec of *v*, on the edge of the phase, and is accessible to T. However, children are predicted to make numerous errors with past-tense auxiliary selection. In the adult, the correct choice of auxiliary in a reflexive or non-reflexive clitic construction corresponds perfectly to whether the surface subject is an underlying subject (HAVE) or an underlying (in)direct object (BE). The child, however, will not be able to exploit this pattern.

Under the UPR, the best strategy that the child could adopt for auxiliary selection would be something like the following (based on Snyder, Hyams and Crisma 1995:136): If the subject and (any) object clitic are interpreted as co-referential, use BE; else, if the verb is lexically marked as requiring BE, use BE; else, use HAVE. To the extent that this is an *ad hoc* strategy, not found in adult grammars, it would have to be the product of blind guesswork. As a result, it is quite unlikely to be the child's first hypothesis. Simpler strategies that would probably be tried earlier would include the following: (i) Use BE in the presence of a clitic such as French *se* or Italian *si*, which is consistently used with BE in the input; else, use HAVE. Or (ii) use BE with any verb that is consistently used with BE in the input (such as *partir* in French); else, use HAVE.

Strategies such as these would lead to a high proportion of errors in children's speech. For example, strategy (i) would lead to errors with the first- and second-person reflexive clitics in French (*me, te*) and Italian (*mi, ti*), because these are homophonous with non-reflexive clitics that occur with HAVE. Similarly, strategy (ii) would lead to errors with any reflexive-clitic construction such as (4b), in which the verb can also be used non-reflexively. Hence, the UPR predicts that (any) immature child will make numerous, readily detectable errors with auxiliary selection in Romance reflexive-clitic constructions.

Evidence to the contrary was presented in Snyder, Hyams and Crisma 1995. That study examined the longitudinal corpora of spontaneous speech for four children in the CHILDES database (MacWhinney 2000): three Italian children (Diana, Guglielmo, Martina) recorded by Calambrone (1992), and one French child (Philippe) recorded by



Suppes, Smith and Léveillé (1973). The children's data were analyzed by first running a computer search for any child utterance containing a clitic, and then hand-coding the resulting utterances in light of their discourse context. The findings are shown in Table 1. The  $p$ -values in Table 1 were obtained from two-tailed Fisher Exact Tests, except in the case of Philippe where a  $X^2$  test was substituted. For Diana, Guglielmo and Philippe the contingency between reflexivity and HAVE/BE was robustly significant. For Martina there were not enough examples to yield statistical significance, but the choice of HAVE/BE was 100% correct in the examples that did occur.

INSERT TABLE 1 ABOUT HERE

More recently, a number of new French and Italian corpora have become available in the CHILDES database. We therefore performed the same analysis described above for two new French-learning children, Max and Léa (De Cat and Plunkett 2002); and for two new Italian children, Elisa (Tonelli collection, MacWhinney 2000) and Raffaello (Cipriani et al. 1989). The ages covered by these corpora are as follows: Max 1;9-3;2, Léa 2;8-3;5, Elisa 1;5-2;1 and Raffaello 1;7-2;11.

INSERT TABLE 2 ABOUT HERE

The results of this analysis are presented in Table 2. The  $p$ -values in Table 2 were all obtained from two-tailed Fisher Exact Tests. The contingency is statistically significant in all four children, and in absolute terms, only four out of 114 relevant utterances contained an error. Hence, we have replicated the findings of Snyder, Hyams and Crisma: The level of success observed here would have been extremely unlikely if

the children lacked the adult grammar for reflexive clitics. Some examples of the relevant child utterances (from Elisa) are provided below.

- (9) a. Mi sono bagnata (age 2;1)  
myself am bathed  
'(I) bathed myself'
- b. L'ho mangiata (age 1;11)  
it have eaten  
'(I) have eaten it' (la pappa = the food)
- c. Si è spo[r]cata (age 2;1)  
himself is dirtied  
'(He) dirtied himself'
- d. L'ho buttata li' dentro (age 2;1)  
it have thrown there inside  
'(I) threw it inside'

Wexler (2002:45) notes that the UPR *would* allow for success with reflexive clitics if an EPP feature on v could somehow be motivated on interpretive grounds. Yet, he leaves this possibility as a direction for future research, without proposing an analysis along those lines. Here we will pursue a different approach, inspired by recent work of Chris Collins.

### 3. A New Approach

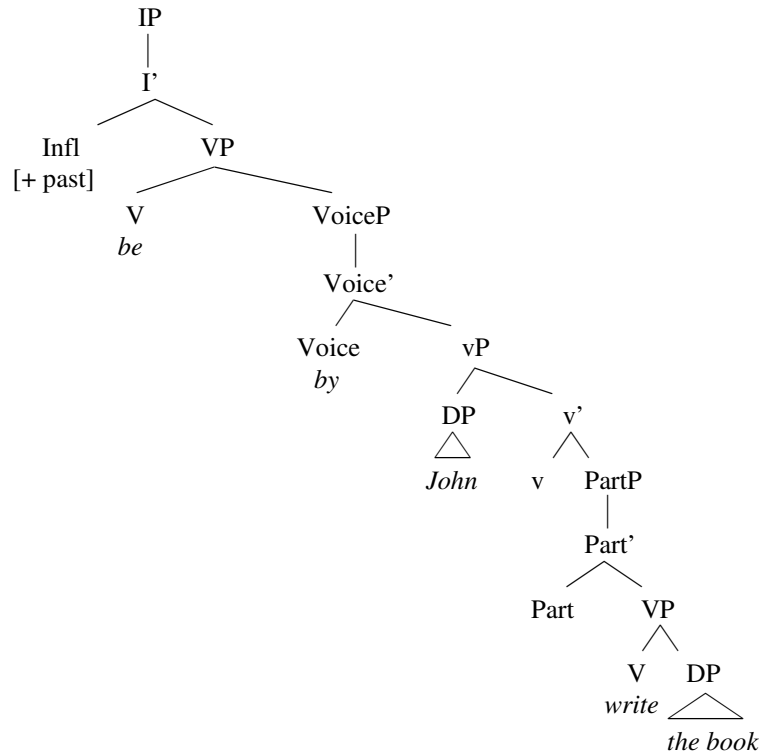
#### 3.1 Young Children Are Frozen

Collins (2005a) proposes an account of the English passive that obeys a strong version of Baker's UTAH (Uniformity of Theta-Assignment Hypothesis, 1988:46, 1997:74). In the passive, as in the active, the external theta role is assigned to Spec of v. In the case of a short passive, the external theta role is borne by a PRO. The underlying structure of a long passive such as (10) would be approximately as in (11). (Here we are abstracting

away from the several cases of remnant movement that occur as the structure is being built.)

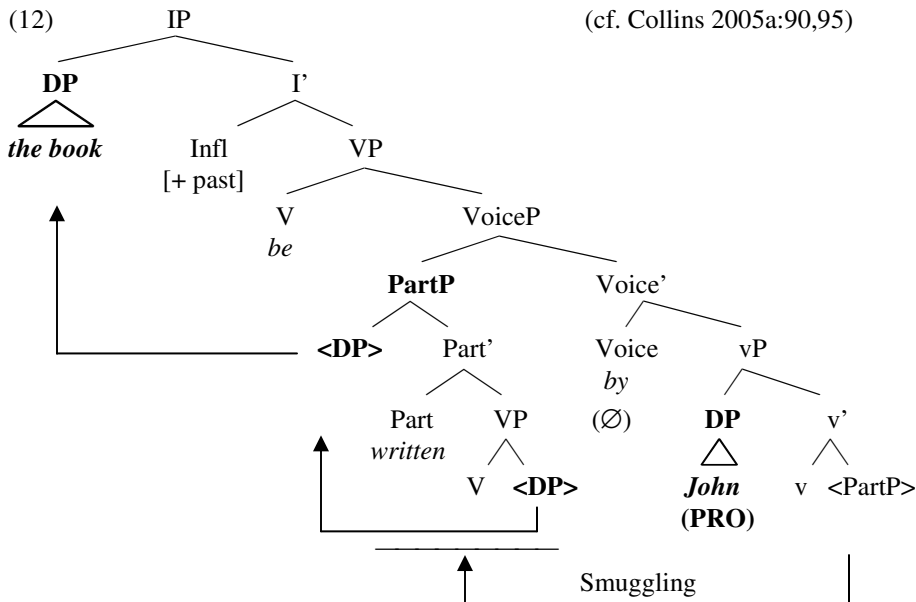
(10) The book was written by John.

(11)



On this account, the apparent object of *by*, the agent *John*, is in fact the specifier of the vP complement of *by*. The complement of *v* is a Participle Phrase, which in turn contains the VP.

In (11), the simple raising of the object to Spec of I would violate minimality (either Relativized Minimality (Rizzi 2001), or the Minimal Link Condition (MLC, Chomsky 1995)). The solution is to “smuggle” the object past the verb’s external argument, as illustrated in (12).



Here, V (*written*) raises to the head of the Participle Phrase, and V’s object (*the book*) raises to Spec of Part. Smuggling occurs when the entire PartP moves to Spec of Voice. This movement itself obeys minimality, and succeeds in “smuggling” the DP up to a position from which it can safely move on to Spec of I.

The smuggling proposal relies crucially on the assumption that the Freezing Principle (originally proposed in Wexler and Culicover 1980:119)) fails to apply in certain environments (Collins 2005b:292). A recent formulation of the Freezing Principle, from Müller 1998:124, is given in (13).

(13) \* X [<sub>Y</sub> ... <X> ...] <Y>

In (12), movement of the DP out of the PartP, after the PartP has already undergone movement, is a direct violation of the Freezing Principle. Hence, Collins is forced to propose that there exist exceptions to the Freezing Principle, although it remains to determine exactly where these occur.

In sum, for Collins the English verbal passive relies on smuggling followed by raising, and this combination is possible only in contexts where the Freezing Principle fails to apply. This leads us to propose that the difference between the child and the adult is that for the child, the Freezing Principle has no exceptions. In other words, the exceptions to the Freezing Principle found in adult grammar are the product of a maturational process. We term this proposal the Universal Freezing Hypothesis:

(14) *Universal Freezing Hypothesis (UFH)*. For the immature child (at least until age four), the Freezing Principle *always* applies: No subpart of a moved phrase can *ever* be extracted.

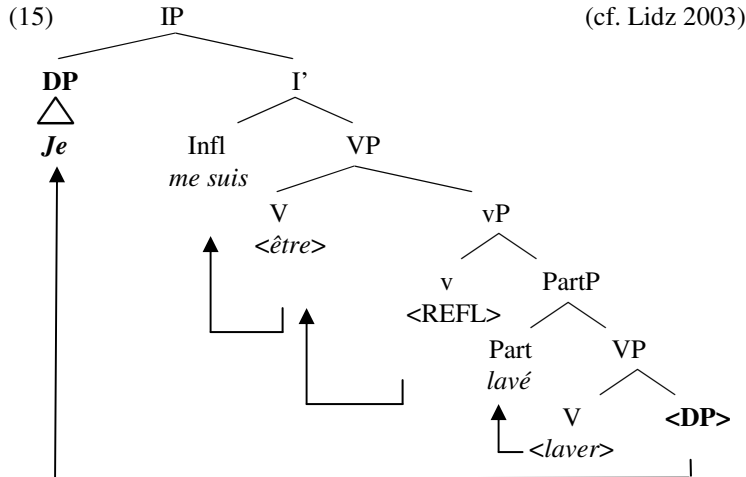
The general consequence of UFH is that immature children will never be able to A-move a DP past another argument: Smuggling-plus-raising will be unavailable, and minimality will reliably block the A-movement.

### 3.2 Why Reflexives Are Not a Problem

The next question is whether the UFH is compatible with children's success on Romance reflexive-clitic constructions. The answer will depend on whether the raising of the object to surface-subject position requires it to move past another argument. In the English verbal passive, the object has to move past a DP in Spec of *v*, which is always present to receive the external theta role. Hence, the question is whether a DP bearing the external theta role is likewise present in the reflexive-clitic construction.

Here we adopt the recent analysis of Lidz 2003, which argues specifically that the external theta role is *not* assigned in reflexive-clitic constructions. Combining the

proposals of Lidz and Collins, the analysis of a French example such as (4b) will look like (15).



On Lidz's analysis, an external theta-role of Agent/Cause is implicit in (15), but not assigned syntactically. If the underlying object is animate, it can be interpreted as Agent, but an impersonal or mediopassive interpretation is also possible. Crucially, there is no external argument to create a minimality violation. Therefore smuggling is not required, and the UFH correctly predicts that the immature child will succeed.

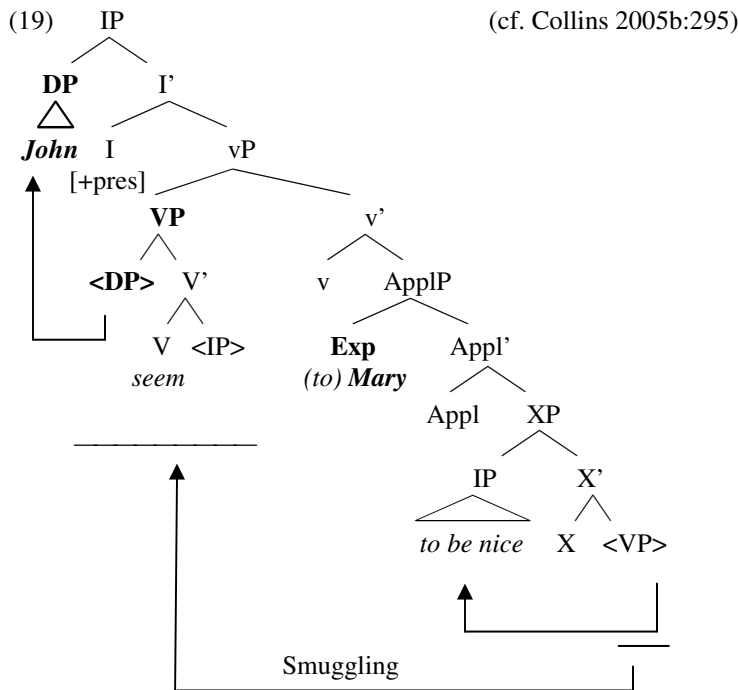
#### 4. Prediction: Raising Past Experiencers (RPE)

The prediction of the UFH is that children will have difficulty with any grammatical construction that requires smuggling-plus-raising. Collins (2005b) argues that raising past an experiencer, as in (18), will violate minimality unless smuggling is employed.

(18) John seems to Mary t to be nice.

The reason that smuggling is required in (18) is that minimality prevents the surface subject *John* from simply A-moving past the experiencer (*to*) *Mary*.

The derivation with smuggling is illustrated in (19). Collins takes the subject to originate as the Spec of the A *nice*, and he takes the experiencer to originate as the Spec of an applicative head.



This derivation involves a considerable amount of remnant movement. After the subject DP *John* has raised to the Spec of the infinitival IP, and from there up to the Spec of the VP headed by *seem*, the remnant IP moves up to the Spec of an XP immediately above that VP. The VP (with the subject DP in its Spec) then moves still higher, to the Spec of the vP above the applicative phrase. The subject DP can now raise up to the matrix Spec of I position without violating minimality.

Importantly, smuggling-plus-raising is required in (18) because of the experiencer. If the experiencer is omitted, these steps are not required.<sup>4</sup> As a result, the UFH makes a distinctive prediction: Immature children will have difficulty with English raising constructions precisely when they contain an experiencer. In contrast, Wexler's UPR predicts difficulty even when the experiencer is absent.

A growing body of evidence indicates that the pattern predicted by UFH is the correct one. Becker, to appear reports that English raising *without* an experiencer, as in (20a), is unproblematic for three-year-olds.<sup>5</sup>

- (20)
- a. The dog seemed to be purple.
  - b. It seems to Ernie that Bert is wearing a hat.
  - c. Bert seems to Ernie to be wearing a hat.

Moreover, as noted earlier, Wexler (2002:3-4) reports that young children are adult-like on examples such as (1) repeated here as (20b), where an experiencer is present but nothing moves past it. Yet, Wexler reports that young children have considerable difficulty with examples like (20c), where the surface subject has moved past the experiencer. This contrast between (20c) versus (20a,b) lends strong support to the UFH.<sup>6</sup>

## 5. Conclusion

Although Wexler's Universal Phase Requirement fares better than its predecessors (ACDH, EARH), it still fails to capture the empirical split between children's late acquisition of passives and early mastery of reflexives. By contrast, the Universal Freezing Hypothesis, proposed in this paper, does capture the passive - reflexive split and



also predicts that children's difficulty with A-movement will be limited to just those cases that involve exceptions to the Freezing Principle in the adult grammar.

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Table 1: Choice of auxiliary with reflexive and non-reflexive clitics (findings of Snyder, Hyams and Crisma 1994)

	Diana		Guglielmo		Martina		Philippe	
	HAVE BE		HAVE BE		HAVE BE		HAVE BE	
NREF	10	1	12	0	3	0	27	2
REFL	0	23	0	35	0	4	0	104
	$(p < .001)$		$(p < .001)$		$(p = .143 \text{ NS})$		$(p < .001)$	

Table 2: Choice of auxiliary with reflexive and non-reflexive clitics

	Max		Léa		Elisa		Rafaello	
	HAVE BE		HAVE BE		HAVE BE		HAVE BE	
NREF	17	0	45	0	15	0	10	0
REFL	2	4	2	13	0	4	0	2
	$(p=.002)$		$(p<.001)$		$(p<.001)$		$(p=.015)$	



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<sup>1</sup> This is in contrast to their inability to comprehend raising past an experiencer, as in *Bert seems to Ernie to be wearing a hat* (cf. Wexler 2002). We return to this point below.

<sup>2</sup> As pointed out to us by Luigi Rizzi, a potential difficulty for the UPR is raised by Kayne's (1989) analysis of passives and unaccusatives. Kayne argues that the direct object moves through an intermediate position, where it triggers agreement on the past participle in languages such as Italian. If this intermediate position is at the edge of the vP phase, then the object can escape from the vP in the usual way, through the phase edge, and there is no need for the ad hoc distinction between strong and weak phases in the adult grammar. This would undermine Wexler's proposal, which relies crucially on the claim that adults have a weak-strong distinction while children do not.

<sup>3</sup> One difference, however, is that the use of BE with the reflexive-clitic construction is exceptionless, while only a proper subset of unaccusative verbs in French occur with BE.

<sup>4</sup> It is worth noting that many languages do not allow RPE, for example, Dutch, German, Farsi, Icelandic among others. (See also Koopman 2004 on variation across adult English speakers in RPE.) Thus, exceptions to the Freezing Principle seem to be a marked option, consistent with our proposal that children initially assume the Freezing Principle always applies.

<sup>5</sup> Similar results were found by Froud, Wexler and Tsakali (in preparation) (reported in Hirsch and Wexler 2006, note 23). Also, in a preliminary analysis reported in Hirsch and Wexler 2006, Hirsch, Orfitelli and Wexler (in progress) find that the ten 4-year olds in their study (average age 4;7) fail on sentences such as (20c) (only 5% correct). With

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respect to simple raising cases such as *John seems to be wearing a hat*, the children broke down into two groups: one that got all such sentences correct (Group A) and another that never did (Group B). The UFH directly predicts the Group A pattern, success on simple raising and failure on raising across an experiencer. The Group B children may simply not yet understand the verb *seem*, which is the only raising verb tested in this study. The children may have done well on the control sentences -- non-raising sentences with *seem* (cf. 20b) -- by simply ignoring the matrix clause and responding to the embedded *Bert is wearing a hat* -- also true given the scenario.

<sup>6</sup> Note that children need not master passive and RPE concurrently. This is because learning, as well as maturational ‘antifreeze’, is required for each of them. (See footnote 4 on cross-linguistic variation in RPE.)