

# Romance Auxiliary Selection With Reflexive Clitics: Evidence for Early Knowledge of Unaccusativity\*

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## 1. Introduction

Borer & Wexler (1987, 1992), working within a Government and Binding (GB) framework, have argued that A-movement (a prerequisite for unaccusative, passive, and raising constructions) is maturationally delayed. In this paper we argue that mastery of auxiliary selection with clitic pronouns in French and Italian depends on having an unaccusative (A-movement) analysis of reflexive clitic constructions. We demonstrate that children master the adult system well before the ages predicted by B&W, and with virtually no errors.

### 1.1 The A-chain Maturation Hypothesis

B&W propose that A-chain formation is maturationally delayed, becoming available around the age of four to five years. In the GB framework, A-movement (and resultant A-chain formation) is the syntactic basis for the grammatical-function changing processes in passive, unaccusative, and raising constructions (1a-c).<sup>1</sup>

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<sup>1</sup>Verbs of the unaccusative class (1c) have been argued (e.g. Perlmutter 1978,

- (1) a. John<sub>i</sub> was pushed (t<sub>i</sub>) (by Fred)  
 b. Tony<sub>i</sub> seems (t<sub>i</sub>) to like Sandy.  
 c. Susan<sub>i</sub> arrived (t<sub>i</sub>) early.

According to the version of GB theory assumed by B & W, the constructions in (1) contrast with transitive and ‘unergative’ constructions (2a,b) in that the latter do not require A-movement or A-chain formation in the course of their syntactic derivation.<sup>2</sup> The absence of traces in (2a,b) reflects the presumed lack of A-movement in these sentences.

- (2) a. Tony likes Sandy.  
 b. Susan works hard.

## 1.2 Spontaneous Production of Passives and Unaccusatives

The main empirical prediction of the B&W hypothesis is that children too young to have developed the syntactic machinery of A-chains will be unable to produce or comprehend sentences of the types in (1), or at best will be able to approximate the adult uses of such constructions by ascribing to them a profoundly non-adult syntactic representation. Recent studies of children’s spontaneous production have failed to support a strong interpretation of the B&W hypothesis, because in fact children acquiring English appear to produce clear uses of both verbal passives and unaccusative constructions well before the fourth birthday. For example, Snyder & Stromswold (in review) have conducted an examination of the CHILDES transcripts (MacWhinney & Snow 1985, 1990) for 12 English-speaking children, and have found the mean age for first clear use of a verbal passive to be 2;5. The mean age for first clear use of an unaccusative construction (in a semantically unaccusative context) was even younger, 2;1.

B&W’s response is that young children have non-adult syntactic representations for these constructions. B&W take unaccusative constructions in early child language to be unergative (not involving A-movement). Such an account is logically possible, but requires either

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Burzio 1986) to take an underlying direct object that becomes a subject in the course of the syntactic derivation. In GB this operation takes the form of A-movement. Other frameworks generally provide at least an approximate counterpart, such as 2->1 Advancement in Relational Grammar.

<sup>2</sup>In more recent instantiations of GB, however, both the subject (in 2a,b) and the direct object (in 2a) have been argued to undergo A-movement at some point in the syntactic derivation. These developments in syntactic theory raise serious concerns as to whether the B&W hypothesis can be coherently stated in terms of A-chains. See B&W 1992, fn. 13, for an attempt to accommodate the VP-internal subject hypothesis.

that the linking rules of Universal Grammar (UG) be violable under certain conditions (which remain to be elucidated), or that the linking rules themselves undergo maturational change.<sup>3</sup>

### 1.3 Auxiliary-selection with Unaccusative Verbs

If production of (apparent) verbal passives and unaccusatives is not a suitable test of the B&W hypothesis, we must find more reliable tests for A-movement. AUX-selection in French and Italian (as well as Dutch and German) has been argued to reflect, at least in part, the unaccusative/unergative distinction (e.g. Perlmutter 1978, Burzio 1986). Thus, in French the unaccusative verb *partir* ‘to leave’ takes the perfect auxiliary *est* ‘is’ (3a), but the unergative verb *dormir* ‘to sleep’ takes *a* ‘has’ (3b).

- (3) a. Jean est parti. (‘John (“is”) left’)  
 b. Jean a dormi. (‘John (“has”) slept’)

Van Hout, Randall, and Weissenborn (1992) have examined AUX-selection in the longitudinal transcripts for one French- and one German-speaking child. Their results, in brief, are that the children initially overextend HAVE to unaccusative verbs requiring BE; the children very rarely overextend BE to verbs that are not unaccusative; and on average (from 1;9 to 4;0) the German child uses the correct form more than 80% of the time. The German child’s low error rate, and both children’s apparent sensitivity to the unaccusative/unergative distinction, might be taken as evidence against the B&W hypothesis.

Yet, the evidence is inconclusive. Especially in French, adults use BE with only a subset of the verbs that are unaccusative by other tests. The child must learn, for each unaccusative verb (or verb type), whether it in fact requires BE. A proponent of the B&W hypothesis can thus argue that the child is learning the HAVE/BE distinction verb-by-verb in all cases, and (at least initially) does not relate the AUX-selection to the presence of A-movement.<sup>4</sup>

### 1.4 Auxiliary Selection with Reflexive Clitics

<sup>3</sup>The latter view would thus imply that children’s early grammars are not in fact possible adult grammars. On poverty-of-the-stimulus arguments for the innateness of linking rules, see (Snyder & Stromswold, in review).

<sup>4</sup>In Italian, however, the syntactic relationship between unaccusativity and AUX-selection has been argued to be much closer than in languages such as French. On Italian children’s knowledge of AUX-selection with unaccusative and unergative verbs, see Sections 3.2 and 4.1.

While AUX-selection in general is not a perfect diagnostic of unaccusativity, AUX-selection with reflexive clitic pronouns is a much more dependable test. Consider for example the French paradigm in (4a,b).

- (4) a. Je me suis/\*ai mordu. (I myself am/\*have bitten) ‘I bit myself’  
 b. Il m’a/\*est mordu. (He me has/\*is bitten) ‘He bit me’

The clitic pronoun  $m(e)$  occurs in a preverbal position, and can serve as either a reflexive form (4a) (with the BE auxiliary) or a non-reflexive form (4b) (with the HAVE auxiliary) (e.g. Kayne 1975, Burzio 1986).<sup>5</sup> A sizable body of linguistic evidence and argumentation indicates that the use of the BE auxiliary with reflexive clitics follows from the fact that reflexive clitic constructions have an ‘unaccusative’ analysis, in which the surface subject is underlyingly the direct object (e.g. Marantz 1984, Bouchard 1984, Cinque 1988, Sportiche 1990, Kayne 1993). Marantz (1984) in fact argues more generally that in languages with a reflexive clitic construction, there is consistently evidence that the construction has an unaccusative analysis. (Marantz provides detailed arguments for French, Icelandic, and Albanian.) Thus, the unaccusative syntax of reflexive clitic constructions, as well as the presence of surface hallmarks of unaccusativity (e.g. selection of BE), appear to follow more or less directly from the principles of UG, rather than from idiosyncratic properties encoded in the lexical entries for individual verbs (or in the lexical entries for the clitic pronouns; cf. (4)).

The paradigm in (4a,b) holds for all verb classes in French and Italian, and children acquire both reflexive and non-reflexive clitics fairly early. Thus, AUX-selection with clitics provides an ideal test for children’s early knowledge of unaccusativity. If children are allowed (indeed obliged) to violate the UG principles that force A-movement in adult languages, then we expect children to adopt an ‘unergative’ analysis of reflexive clitic constructions (or more precisely, a simple transitive analysis). We thus expect children initially to use the same perfective auxiliary with both reflexive and non-reflexive clitics. We might also expect that children will try to approximate the adult distinction, for example by preferentially using BE with verbs or clitic pronouns that are more frequently used reflexively in the adult input.<sup>6</sup> Thus, the

<sup>5</sup>Clitic pronouns contrast with full NPs in French and Italian, which normally occur in a postverbal position, and also contrast with the non-clitic object pronouns (e.g., *himself*) found in English.

<sup>6</sup>If UG allows AUX-selection to be conditioned directly by binding relations, then we might also imagine that some children will eventually arrive at the erroneous hypothesis that BE is associated with (all) reflexive objects. In this case, we would (additionally) expect errors in which the child overextends BE to the non-clitic reflexive objects found in Italian.

French: (Suppes, Smith, & Leveille 1973)		
Philippe:	2;1.19 - 3;3.12	(15,076 Lines of child speech)
Italian: (Calambrone 1992)		
Diana:	1;8.5 - 2;6.13	(2,196 Lines of child speech)
Guglielmo:	2;2.1 - 2;11.14	(2,205 Lines of child speech)
Martina:	1;7.18 - 2;7.15	(4,218 Lines of child speech)

Table 1: CHILDES transcripts examined in this study.

predictions we derive from the B&W hypothesis are that acquisition of the HAVE/BE distinction with object clitics should be (1) slow and (2) error-laden. Our tests of these predictions are presented in the following sections.

## 2. Method

We examined the CHILDES transcripts (MacWhinney & Snow 1985, 1990) for one French-speaking child and for three Italian-speaking children, to determine the error rates for AUX-selection with reflexive and non-reflexive clitic pronouns over the time course of acquisition. These longitudinal transcripts of sampled naturalistic production are described in Table 1.

We began by searching for all contracted and uncontracted forms of all the object clitics in the child's target language. From the resulting utterances we eliminated all extraneous (e.g. adult) utterances.<sup>7</sup> Each remaining utterance was hand-coded as one of the following: Reflexive with BE, Reflexive with HAVE, Non-reflexive with BE, Non-reflexive with HAVE, or Other. For the Italian children, we also conducted a broader search, in which we located all child utterances containing any (contracted or uncontracted) form of BE or HAVE. We then hand-coded each utterance not involving a clitic as one of the following: Unaccusative verb with BE, Unaccusative verb with HAVE, Other verb type with BE, or Other verb type with HAVE.

## 3. Results

### 3.1 French

<sup>7</sup>We also checked the context of each child utterance and excluded: Imitations of adult utterances, stereotyped routines, stuttered/unclear utterances, main verb (possessive) uses of HAVE, utterances annotated by the transcriber as 'questionable', and phonologically ambiguous utterances.

	BE	HAVE
Reflexive	27	2
Nonreflexive	0	104
	( $\chi^2(1) = 115.8, p \ll .001$ )	
Reflexive	6	0
Nonreflexive	0	8
	(Fisher Exact Two-Tailed $p = .01$ )	

Table 2: Total counts (top); minimal pair with *casser* ‘to break’

The top of Table 2 summarizes the results (cumulative counts) for all of Philippe’s transcripts, ranging over the ages 2;1.19 to 3;3.12.<sup>8</sup> Philippe never overextended BE to non-reflexive clitic constructions in any of 32 relevant utterances, and overextended HAVE to reflexive clitic constructions in only two of 109 relevant cases.<sup>9</sup> This error rate suggests rare performance errors in the face of overwhelming mastery.

Philippe’s first clear uses of the BE auxiliary with a reflexive clitic occurred (one use) in transcript 09, at the age of 2;3.14, and (two uses) in transcript 10, at the age of 2;3.21. Philippe’s first clear uses of the HAVE auxiliary with a non-reflexive clitic occurred (one use) in transcript 10 (2;3.21) and (two uses) in the following transcript 11 (2;6.13).

Philippe demonstrated mastery of the HAVE/BE distinction with clitic pronouns of all three persons, although he used second-person clitic pronouns relatively infrequently.<sup>10</sup> Furthermore, we found no evidence that Philippe was (incorrectly) basing AUX-selection with clitic

<sup>8</sup>In Table 2 and several subsequent contingency tables, where the effect size is quite large, we employ the  $\chi^2$  statistic as an approximation of the more appropriate (but computationally demanding) Fisher exact test.

<sup>9</sup>Philippe’s two AUX-selection errors with reflexive clitics were, ‘Je m’ai fait mal’ (‘I hurt myself’, or more literally, ‘I have caused myself pain’, in transcript 32), and ‘Je m’ai cogné avec cette hélice’ (‘I hit myself with this propeller’, in transcript 33). Philippe in the space of a few seconds says ‘Je m’ai fait mal’ twice, and also says what is transcribed as ‘Je s’ai fait mal’ once. (Use of the third-person reflexive clitic *s(ε)* is completely incongruous here.) We counted all three uses as a single utterance, because in general it was our practice to count temporally contiguous (near-)repetitions of a given string only once. In addition to the utterances counted in Table 2, some 33 utterances were omitted because of the exclusionary criteria mentioned in Section 2. None of the excluded utterances contained errors of AUX-selection.

<sup>10</sup>Philippe also correctly used the dative+accusative clitic combinations *me l’* and *te l’* with HAVE in non-reflexive contexts.

pronouns on the choice of verb, as might have been expected under the B&W hypothesis. A verb that happened to occur fairly frequently with the past auxiliary and with both reflexive and non-reflexive object clitics, was *casser* ‘to break.’ As illustrated at the bottom of Table 2, Philippe used BE in reflexive cases and HAVE in non-reflexive cases, with absolutely no errors. Philippe’s success with this verb is especially striking because its ‘reflexive’ uses happen to be instances of a wide-spread phenomenon in French, in which the reflexive clitic does not convey semantic reflexivity, but rather serves as an unambiguous marker of unaccusativity for verbs of the ‘inchoative’ class. Thus, ‘Jean l’a cassé’ means, ‘John broke it’, while ‘Le verre s’est cassé’, literally ‘The glass broke itself’, means simply ‘The glass broke’; *le verre* is semantically a patient/theme, and syntactically an (underlying) direct object.

Finally, Philippe has one utterance suggesting that he understands a very subtle point of AUX-selection with reflexive clitics, namely that a non-reflexive dative clitic can co-occur with a verb that happens to belong to the unaccusative class. Thus, the surface subject is underlyingly a direct object not because of the presence of a reflexive clitic, but because of the independent semantic properties of the verb. In the adult language the ‘unaccusative’ auxiliary BE is required in such cases, and in his one utterance of this type, Philippe correctly uses BE: ‘Il lui est arrivé des ennuis’ (literally, ‘There happened to him some problems’; transcript 26, 2;11.7).

### 3.1 Italian

Because of the smaller numbers of child utterances in the Italian children’s corpora, as compared to Philippe’s corpus, we will provide only a brief summary. Of the three children, (exactly) one child (Diana) made (exactly) one error in AUX-selection in the presence of a clitic pronoun. As with Philippe, the error was in the direction of using HAVE with a reflexive clitic. Otherwise, each of the three children consistently used BE with reflexive clitics and HAVE with non-reflexive clitics throughout their corpora (see Table 3, left-hand side). Because the corpora in all cases end well before the fourth birthday, we conclude that all children mastered the adult system of AUX-selection with clitic pronouns (1) well before the ages predicted by the B&W hypothesis, and (2) without the protracted period of erroneous uses predicted by B&W.

The right-hand side of Table 3 shows the results of our examination of AUX-selection in the absence of clitic pronouns, where BE is required in the adult language with unaccusative verbs, and HAVE is required

	Clitics			No Clitics	
	BE	HAVE		BE	HAVE
Reflexive:	10	1	Unacc.:	17	2
Non-reflexive:	0	23	Other:	0	42
(Acc/Dat)		(20/3)			
(Fisher exact two-tailed $p < .001$ )			$(\chi^2(1) = 47.7, p < .001)$		
Reflexive:	12	0	Unacc.:	18	0
Non-reflexive:	0	35	Other:	0	14
(Acc/Dat)		(27/8)			
(Fisher exact two-tailed $p < .001$ )			$(\chi^2(1) = 28.1, p < .001)$		
Reflexive:	3	0	Unacc.:	3	0
Non-reflexive:	0	4	Other:	0	15
(Acc/Dat)		(4/0)			
(Fisher exact one-tailed $p < .03$ ; two-tailed $p = .143, NS$ )			(Fisher Two-tailed $p < .002$ )		

Table 3: Total counts for Diana (top), Guglielmo, and Martina.

with unergative and (active) transitive verbs. The children again made surprisingly few errors; Diana made two errors, both in the direction of using HAVE with an unaccusative verb, and the other children made no errors. The relative lack of errors contrasts with the findings of Van Hout, Randall, & Weissenborn for French, where overextensions of HAVE to unaccusative verbs were quite common.

## 4. Discussion and Conclusions

### 4.1 Main Findings

The French and Italian children demonstrated mastery of AUX-selection with reflexive and non-reflexive clitics well before the ages expected under the B&W hypothesis, and without any suggestion of a stage at which they had misconstrued the adult system. As argued in Section 1, AUX-selection with clitics cannot be a lexical phenomenon (for either the adult or the child), because we find minimal pairs in which the same verb and (phonologically) the same clitic require different auxiliaries depending on whether the clitic is used reflexively or non-reflexively.

In the case of Philippe, we presented evidence that AUX-selection is

error-free even across minimal pairs involving the same verb. We also noted that Philippe demonstrated mastery of the HAVE/BE distinction within each of the first-, second-, and third-person clitic paradigms. This result speaks against the possibility that Philippe has simply mapped morphologically ‘reflexive’ clitics onto BE and morphologically ‘non-reflexive’ clitics onto HAVE, because in the first- and second-person paradigms the reflexive and non-reflexive clitics are (at least phonologically) identical. Moreover, Philippe’s correct use of BE with a non-reflexive dative clitic and an unaccusative predicate (*il lui est arrivé des ennuis*) speaks against the possibility that he is representing the AUX-selection paradigm in terms of BE for semantically reflexive clitics and HAVE for semantically non-reflexive clitics. Still further evidence that Philippe is representing the AUX-selection paradigm in terms of syntactic A-movement comes from the fact that a sizable percentage of his uses of BE with ‘reflexive’ clitics (including the six uses at the bottom of Table 2) are with ‘historically reflexive’ inchoative verbs, which in French occur with a reflexive clitic that serves primarily as an overt marker of unaccusativity, rather than an expression of semantic reflexivity.

The Italian children demonstrated early and virtually error-free mastery of AUX-selection both with clitic pronouns, and also with unaccusative versus unergative and transitive verbs. This is consistent with the view that selection of BE in Italian is more closely tied to unaccusativity than it is in modern French. If children do not need to engage in conservative, verb-by-verb learning in order to know whether an unaccusative verb in fact takes BE, then it follows that children will not go through a period (as reported by Van Hout, Randall, and Weissenborn (1993) for French) in which they incorrectly use HAVE with many unaccusatives. Yet, if the Italian children were syntactically misrepresenting (adult) unaccusative verbs as unergative, as required by the B&W hypothesis, it is unclear how they could so successfully relate selection of BE to unaccusativity.<sup>11</sup>

#### 4.2 Ruling Out Alternative Explanations

Despite the above discussion, one could still imagine that the child lacks A-movement and is employing a non-adult strategy such as the

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<sup>11</sup>One might imagine that the Italian children are choosing BE when the surface subject denotes a semantic patient, and HAVE when the subject denotes, for example, the agent of the predicate. This would identify approximately the class of unaccusative verbs without requiring that the children have a syntactically unaccusative analysis for sentences containing these verbs. Notice, however, that such an account cannot be extended to (true) reflexive clitic constructions, where the individual denoted by the surface subject is typically both the agent and the patient of the predicate.

following: If the subject and (any) object clitic are co-indexed, use BE; else, if the verb is lexically unaccusative, use BE; else, use HAVE. The argument against such an account is (first) that as far as we can tell from current linguistic theory, such a strategy would be entirely ad hoc. The proposed strategy is sufficiently complicated that it is highly unlikely to be the initial hypothesis of every child faced with the task of constructing a non-UG analysis of AUX-selection with clitic pronouns in French and Italian. A variety of much simpler hypotheses would cover much (though not all) of the input, and should be considerably more salient: If the verb is lexically marked as taking BE, use BE; else, use HAVE. Or, if the clitic is *se/si*, use BE; else, use HAVE. Or, if the clitic is coindexed with the subject, use BE; else, use HAVE. Crucially, any of these simpler strategies would lead to substantial errors in cases where we have shown that the French and Italian children make virtually none.

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