

Children first start with a single processing model—‘Merge’,
then move to a dual processing model— ‘Move’¹

Joseph Galasso
California State University, Northridge
joseph.galasso@csun.edu

2011

Abstract

One of the most dominant themes captured in syntactic theory has been the notion of *movement*. Still very little is known about how movement develops over time in child language, or, cross-linguistically, how its rate of development is pegged to languages with rich morphologies. Researchers of child language acquisition have long noted that children pass through developmental stages of grammatical morphology, with the early multi-word stage showing ‘variable’ and ‘optional’ production rates of morpho-syntactic inflection. Accounts range in the literature from phonological deficits, where prosodic development may be a factor, to semantic or syntactic under-representations, where features may go unspecified. Specifically, one current syntactic model suggests that such variable delays are, to a large degree, ‘optional’ due to incomplete inflectional representations of features (Wexler, 1994). While we are in agreement with the general account that Wexler lays out for us, we agree contra Wexler from our own previous work done showing that there exists an even earlier stage during which children have complete ‘non-access’ to inflectional morphology.

The present paper, based on a longitudinal case study of an English speaking child (Radford & Galasso 1998, Galasso 2003), covers the acquisition of movement and extends its analysis to properties of inflectional morphology as well as to word order. We briefly examine the role the absence of ‘Move’ might play in accounting for the early appearance of *morpho-syntactic* and *word order violations*. Regarding word order, initial simple merge-operations which yield structures like *cup coffee* [[N cup] + [N coffee]] or, more generally speaking, mixed order can then target dual move-operations instigated by Inflectional Phrase (IP) structures accordingly:

- (i) *Merge* [[N cup] + [N coffee]] → Two lexical items merge: *cup, coffee*
 - a. Yielding mixed SV, VS, OV, VO orders at the single argument string (SAS) stage.
- (ii) *Move-1* [IP cup_i [I' of]... [cup_i] [coffee]] → Genitive
- (iii) *Move-2* [[IP coffee_i cup] of coffee_i] → Adjectival (derived from Genitive)

¹ Abstract of Data taken from ‘The Acquisition of Functional Categories’ (Galasso, J.) 2003, IULC Publications.

Both structures such as *cup of coffee* and *coffee cup* require a higher clitic position as a result of a movement operation from the base *merge* [cup, coffee] (Roeper, 1999). Adult English uniquely allows for both a move-2 compliant structure e.g., *wine bottle* (=adjectival) and a move-1 compliant structure *bottle of wine* (=genitive), but not *bottle wine*. Any ‘non-compliance of movement’ would then account not only for our attested child word order deviance of the type *cup coffee* found in our data, but also allow us to account for the wide array of mixed word order found amongst early SV, VO ‘single argument strings’ (where only *merge* is said to apply), with late acquired ‘double argument strings’ thus targeting a position created by *move* and triggering correct SVO word order. Other ubiquitous examples come from ‘affix-hopping’ where verbal/nominal inflection is seen as a result of movement e.g., *Tom’s book* [IP *Tom* [I {s}] *book*], *drinks milk* [IP *drink*] [I {s}] *milk*] (Kayne, 1994). The proposed theoretical model presented in this paper shows how the delay of both word order and inflectional morphology alike follow from a protracted development in which ‘Merge’ operations emerge in the child’s grammar slightly ahead of ‘Move’—a ‘Merge-first’ over ‘Move-later’ account of syntactic development.

1. Introduction: The nature of syntactic trees

One of the leading tenets that have come out of current linguistic theory is the notion that the formation of syntactic trees is based upon an *architecture* whose principles are ubiquitous throughout biology. A ‘universal’ architecture of the likes of the Fibonacci sequence, which seem to delimit prescribed binarity of branching to project syntactic structure to move in certain ways, surely captures our collective imagination, whether or not one ascribes to universalism. The very idea that the way we humans string words together may have ancestral links to spiral formations found in shell fish is nothing short of stunning. Yet, the ‘golden ratio’ of Fibonacci holds. In this short abstract/paper, we present what might look to be an example of the old adage—*ontogeny recapitulates phylogeny*, at least in terms of how we can connect the early building-blocks of the architecture to what we now know about the way binary branching might evolve in the scheme of child syntactic development. In making this connection, we examine the notion of early *merge* sequences as an early step formation of the binary architecture and then turn to the data to realize how the nature of the architecture impacts the emergence of the development of child syntax.

2. The Data (Galasso 2003)

2.1 Inflectional Morphology

Two- and three-year-old children generally go through a stage during which they sporadically omit possessive ‘s’, so alternating between saying (e.g.) *Daddy’s car* and *Daddy car*. At roughly the same age, children also go through a stage (referred to by

Wexler 1994 as the **optional infinitives** stage) during which they sporadically omit the third person singular present tense +s inflection on verbs, so alternating between e.g. *Daddy wants one* and *Daddy want one*. The question addressed in this paper is whether children's sporadic omission of possessive 's is related to their sporadic omission of third person singular present tense s—and if so, how. This question is explored in relation to data provided by a longitudinal study conducted by Joseph Galasso of his son Nicolas between ages 2;3 and 3;6 (based on transcripts of weekly audio recordings of Nicolas' speech production).

Nicolas' speech production provides some prima facie evidence of a relation between the acquisition of possessive 's and the third person singular s: prior to age 3;2, Nicolas used neither possessive 's nor third person singular s in obligatory contexts; it is only from age 3;2 on that we find both morphemes being used. The table in (1) below shows the relative frequency of use of possessive 's and third person singular present tense s in obligatory contexts before and after age 3;2:

(1)	OCCURRENCE IN OBLIGATORY CONTEXTS		
	AGE	3sgPres s	Poss 's
	2;3-3;1	0/69 (0%)	0/118 (0%)
	3;2-3;6	72/168 (43%)	14/60 (23%)

Typical examples of nominals and clauses produced by Nicolas at the relevant stages are given in (2) and (3) below respectively:

- (2) (a) That *Mommy* car (2;6). No *Daddy* plane (2;8). *Batman* (2;11 in reply to Whose it is?). It *Daddy* bike, no *Baby* bike. Where *Daddy* car? (3;0).
 (b) *Daddy's* turn (3;2). It's the *man's* paper (3;4). It's *big boy Nicolas's*. It's *Tony's*. What's the *girl's* name? Where's *Zoe's* bottle? (3;6)
- (3) (a) Baby *have* bottle (2;8). No Daddy *have* Babar (2;9). The car *go*. (2;11).
 The other one *work* (3;0). Here *come* Baby (3;1).
 (b) Yes, this *works*. This car *works*. It *hurts*. The leg *hurts*. Barney leg *hurts*.
 It *rains* (3;2).

The data in (1-3) suggest a potential parallel between the acquisition of third person singular +s and possessive 's, and raise the obvious question of why there should be such a parallel.

From a morphological perspective, such a parallel would not be unexpected, given that possessive 's and third person singular s (e.g. the contracted form 's of the auxiliary *is*) have the same range of overt allomorphs, as we see from (4) below:

(4)	ALLOMORPH	AUXILIARY	POSSESSIVE
	/s/	Pat 's coughing	Pat 's cough
	/z/	Teddy 's coughing	Teddy 's cough
	/iz/	Madge 's coughing	Madge 's cough

Moreover, there are also potential syntactic parallels between the two. Under the analysis of clause structure assumed in Chomsky 1981 and much subsequent work, a clause such as *Pat's coughing* would contain an IP projection of the simplified form (5) below:

(5) [IP Pat [I 's] coughing]

with 's encoding both present tense and agreement with a third person singular subject-specifier like *Pat*. (See Galasso 2003 for an alternative account showing the verbal morpheme +s as exclusively marking Tense). Under the analysis of possessive structures in Kayne (1994: p. 105), a nominal structure such as *Pat's cough* would likewise contain an IP projection with the simplified structure (6) below (with I being a nominal rather than a verbal inflectional head):

(6) [IP Pat [I 's] coughing]

and it might be argued that 's serves to encode agreement with a third person singular subject-specifier like *Pat*. (Similar analyses of English possessive structures are found in Chomsky 1995 p. 263, Zribi-Hertz 1997, and Radford 1997 p. 278). This is by no means implausible from a universalist perspective since we find a variety of languages which overtly mark possessor agreement: languages as diverse as American Sign Language, Dutch and Turkish have possessor agreement structures paraphraseable in English as '*Daddy his car*', '*Mummy her car*'.

If both possessive 's and third person singular s are reflexes of an agreement relation between an inflectional head and its specifier, an obvious suggestion to make is that omission of third person singular s and possessive 's may both reflect agreement failure (i.e., failure to encode the agreement relation between an inflectional head and its specifier). In the terminology of Schütze and Wexler (1996) and Schütze (1997), s-less forms may be the result of the relevant inflectional head being **underspecified** with respect to the specifier-agreement features it carries. In simplified schematic terms, we might say the clausal structures like *Mummy's driving* contain an IP of the simplified form (7a) below (with INFL carrying agreement features matching those of its subject-specifier), and the corresponding s-less clause *Mummy driving* has the partial structure (7b) (with INFL being underspecified in respect of its subject-agreement features):

(7) (a) [IP Mummy [I +agr 's] driving]

(b) [IP [Mummy [I -agr \emptyset] driving]

In much the same way, we might suggest that possessive structures like *Mummy's car* contain an IP projection like (8a) below headed by an inflectional node fully specified for agreement with its possessor-specifier *Mummy*, whereas s-less possessives like *Mummy car* contain an IP projection like (8b) below with an inflectional head which is underspecified with respect to agreement with its possessor-specifier²:

- (8) (a) [IP Mummy [I +Agr 's] car]
 (b) [IP Mummy [I -Agr \emptyset] car]

A further assumption implicit in the analysis in (7/8) is that 's is only used where INFL is fully specified in respect of its agreement properties; otherwise, INFL is null.

The assumption that *s*-less forms may be the result of agreement underspecification has interesting implications for the case-marking of the specifier in both nominal and clausal structures. Schütze (1997) argues that there is a cross-linguistic correlation between case and agreement (e.g. that an INFL which is specified for subject-agreement has a nominative subject). Making rather different assumptions from his (for reasons which do not affect the conclusions drawn here), let us suppose that adult English has the following case system:

- (9) An overt (pro)nominal is:
 (a) nominative if in an agreement relation with a verbal INFL
 (b) genitive if in an agreement relation with a nominal INFL
 (c) objective otherwise (by default)

If we assume (following Schütze and Wexler) that children have acquired the morphosyntax of case and agreement by around two years of age, and that two and three-year old children go through a stage during which functional heads are optionally underspecified with respect to the features they encode, we can provide a straightforward account of why two- and three-year olds alternate between forms like *I'm playing* and *Me playing*. The two types of clause would have the respective (partial) structures (10a/b) below:

- (10) (a) [IP I [I +agr 'm] playing]
 (b) [IP Me [I -agr \emptyset] playing]

Since INFL is fully specified for agreement in (10a), the overt auxiliary 'm is used, and the subject is nominative by (9a). But since INFL is underspecified with respect to agreement in (10b), it remains null and has a default objective subject by (10b).

If—as suggested in (8a/b) above—possessive nominals contain an IP headed by an INFL that may either be fully specified or underspecified for agreement, we would expect to find a similar alternation between nominal structures like (11a) below with genitive possessors and those like (11b) with objective possessors:

- (11) (a) [IP My [I +agr \emptyset] dolly]
 (b) [IP Me [I -agr \emptyset] dolly]

In (11a), INFL is fully specified for agreement with its possessor-specifier and so the possessor has genitive case by (9b); but in (11b), INFL is underspecified for agreement, and so its possessor-specifier has objective case by (9c). In both structures, INFL is null because 's is used only where the specifier is third person.

In short, the assumption that children's possessive structures may optionally be underspecified with respect to agreement predicts that children who go through such an underspecification stage in the acquisition of possessives should alternate between structures with genitive and objective possessors. The use of objective possessors has been reported for Dutch by Hoekstra and Jordens (1994), but not for English.

If we look at the earliest first person singular possessor structures produced by Nicolas, we find that objective *me* possessors predominate at ages 2;6-2;8, and that genitive possessives (viz. the weak form *my* and the strong form *mine*, with occasional early confusion between the two) are initially relatively infrequent, but gradually become more and more frequent until they predominate by age 3;0. The table in (12) below shows the relative frequency of objective and genitive possessors used by Nicolas at various ages:

(12) **Frequency of occurrence of first person singular possessors**

AGE	OBJECTIVE ME	GENITIVE MY/MINE	NOMINATIVE I
2;6-2;8	53/55 (96%)	2/55 (4%)	0/55 (0%)
2;9	11/25 (44%)	14/25 (56%)	0/25 (0%)
2;10	4/14 (29%)	10/14 (71%)	0/14 (0%)
2;11	5/24 (21%)	19/24 (79%)	0/24 (0%)
3;0	4/54 (7%)	50/54 (93%)	0/54 (0%)
3;1-3;6	6/231 (3%)	225/231 (97%)	0/231 (0%)

Examples of first person/sing possessive structures produced by Nicolas are given below:

- (13) (a) That *me* car. Have *me* shoe. *Me* and *Daddy* (= Mine and Daddy's).
Where *me* car? I want *me* car. I want *me* bottle. I want *me* woof (2;6-2;8).
(b) I want *me* duck. That *me* chair. Where *me* Q-car? No *me*, daddy (= It isn't mine, Daddy). *Me* pasta. *Mine* pasta. *My* pasta. In *my* key. It *my* (= It's mine). No book *my* (=The book isn't mine.)
(c) It is *my* TV. Where is *my* book? Where is *my* baseball? Don't touch *my* bike. I want *my* key. It's *my* money (3;0).

In terms of the analysis outlined in (11) above, the picture which the data in (12) seem to suggest is that the possessive structures produced by Nicolas are initially predominantly underspecified for possessor-agreement, with agreement gradually being specified more and more frequently (until it exceeds the traditional 90% correct use threshold by the time he is 3 years of age).

Interestingly, there are potential parallels to be drawn with Nicolas' use of first person singular subjects. As the examples in (14) below illustrate, Nicolas alternates between nominative and objective subjects in his early clause structure:

- (14) (a) *I am me. I am Batman. I'm sick* (2;8). *I am Batman.I am Q. I am car* (2;9)
 (b) *Me Q* (2;8 = *I am Q*). *Me in there* (=I'm in there). *Me car* (= *I am a car*)
Me wet (= I'm wet). (2;9)

The table in (15) below shows the relative frequency of *I* and *me* subjects in copular sentences:

(15) **Frequency of *I/me* subjects in copular sentences**

AGE	NOMINATIVE I	OBJECTIVE ME
2;6-2;8	10/14 (71%)	4/14 (29%)
2;9	15/19 (79%)	4/19 (21%)
2;10-3;0	51/55 (93%)	4/55 (7%)
3;1-3;6	105/111 (95%)	4/111 (5%)

In terms of the agreement-underspecification analysis, clauses such as *I'm sick* and *Me wet* might be argued to have the respective simplified structures (16a/b) below:

- (16) (a) [_{IP} I [_I +agr 'm] sick]
 (b) [_{IP} Me [_I -agr \emptyset] wet]

In (16a) INFL is fully specified for agreement and so is realised as 'm and has a nominative subject by (9a), whereas in (16b) INFL is underspecified for agreement and so has a null realisation and an objective subject by (9c). The data in the tables in (12) and (15) would suggest that subject-agreement is acquired more rapidly than possessor-agreement: this may (in part) reflect the fact that agreement with a first person singular subject is overtly encoded on INFL (by use of *am/'m*), whereas agreement with a first person singular possessor is not overtly encoded on D (which is null).

If we turn now to look at structures with second person possessors, we find that these only appear in the transcripts from 3;2 onwards. The predominant second person possessor form is initially *you*, but this is gradually ousted by *your* over the next few months, as the figures in the table in (17) below illustrate:

(17) **Frequency of second person possessors**

AGE	YOU	YOUR
3;2-3;4	14/16 (88%)	2/16 (12%)
3;5	7/34 (21%)	27/34 (79%)
3;6	2/29 (7%)	27/29 (93%)

Typical examples of second person possessor structures produced by Nicolas are given below:

- (18) (a) No *you* train. (=It's not your train). No it's *you* train, no (idem). No *you* baby, Mama baby. This is *you* pen (3;2)
 (b) That's *your* car. It's *you* elephant. It's *you* turn. It's *you* kite. It's *you* plan. I got *you* plan. Close *your* eyes. It *you* house? No it's *you* house. Where's *you* house? Where's *you* bed? Where's *your* friend? (3;4)

It seems reasonable to suppose that *your* possessors are genitive (as in adult English), and that (since Nicolas never uses nominative possessors) *you* possessors are objective. In terms of the analysis proposed here, nominals like *your car/you car* would have the respective (sub)structures (19a/b) below:

- (19) (a) [IP your [I +agr \emptyset] car]
 (b) [IP you [I -agr \emptyset] car]

In (19a), INFL is fully specified for agreement with its second person possessor-specifier and so the possessor has genitive case by (9b); but in (19b), INFL is underspecified for agreement, and so its possessor-specifier has objective case by (9c). INFL is null in both (19a) and (19b) because the overt possessive morpheme 's is used only where the possessor is third person. Although we might expect to find a parallel change from objective to nominative subjects in clausal structures, we clearly cannot test this empirically in any straightforward fashion, because the pronoun *you* serves a common nominative/objective function.

The only other pronominal possessors used by Nicolas are the third person masculine singular forms *him/his*, which first appear in the transcripts at age 3;6. 10/13 (77%) of the relevant structures have an objective *him* possessor, the remaining 3 (23%) having a genitive *his* possessor. An exhaustive list of the relevant structures is given in (20) below:

- (20) (a) It's *him* house. It's *him* hat (x2). *Him* eye is broken. *Him* bike is broken.
 I want to go in *him* house. Help *him* legs. What's *him* name (x3)
 (b) What's *his* name (x3)

In terms of the analysis presented here, nominals such as *his name/him name* would have the respective (simplified) structures (21a/b) below:

- (21) (a) [IP his [I +agr \emptyset] name]
 (b) [IP him [I -agr \emptyset] name]

We find a genitive *his* possessor by (9b) in (21a) where INFL is fully specified for possessor-agreement, and an objective *him* possessor by (9c) in (21b) where INFL is underspecified for agreement.

An obvious question to ask is whether we find parallels between third person singular masculine possessors and third person singular masculine subjects. Typical copular clauses with third person singular subjects produced by Nicolas at 3;6 are illustrated below:

- (22) (a) Here's him. Where's him? Him is alright. Him is my friend.
Him is a big woof-woof. Him is hiding. What's him doing?
Where's him going? Where's him? Where is him?
- (b) What him doing? Him blue. Him alright. Him dead. Him my friend.
Him not my friend.
- (c) He's happy. He's bad. He is a bad boy. He's in there.
- (d) He happy. He a elephant.

25/32 (78%) of the copular sentences within third person singular subjects produced by Nicolas at 3;6 have objective *him* subjects (a figure comparable to his 77% use of *him* possessors), with the remaining 7/32 (22%) having nominative *he* subjects (compared to 23% use of *his* possessors). This is clearly consistent with our view that possessors and subjects show a related pattern of development.

We can summarize the range of possessive structures used by Nicolas in the following terms. We find the same overall pattern of development with all three types of pronominal possessor which he uses: in each case, the earliest possessive nominals he produced have objective (*me/you/him*) possessors, and these are gradually ousted by genitive (*my/your/his*) possessors. Under the analysis suggested here, the transition from objective to genitive possessors reflects the transition from an early nominal structure with an inflectional head underspecified for possessor-agreement to a later nominal structure with an inflectional head fully specified for agreement. If (following Kayne) we take possessive 's to be a possessor-agreement inflection, there are obvious parallels here with the development of *s*-possessives: as we saw in (1-2) above, the earliest nominal possessor structures produced by Nicolas are *s*-less forms like *Daddy car*, and these are clearly consistent with the view that children's early possessive nominals contain an IP with an inflectional head which is underspecified for possessor-agreement.

Moreover, there are interesting potential parallels between the development of possessor+noun structures and subject+verb structures. Just as Nicolas fails to mark possessor agreement at all in nominal structures like *Baby bottle* until age 3;2 (and thereafter goes through a period of optional marking possessor-agreement), so too he similarly fails to mark subject-agreement in clausal structures like *Baby have bottle* until 3;2 (and thereafter goes through a period of optionally marking subject-agreement). Similarly, just as we find a transition from nominal structures with objective possessors (like *me car*, *you car*, *him car*) to structures with genitive possessors (like *my car*, *your car*, *his car*), so too we find a parallel transition from clausal structures with objective

subjects (like *Him naughty*) to structures with nominative subjects (like *He's naughty*). If we assume that genitive and nominative case are checked via an agreement relation with a nominal and verbal inflectional head respectively whereas objective case is a default form used in agreementless structures, the gradual change from objective possessors and objective subjects to genitive possessors and nominative subjects reflects a parallel change from a structure headed by an agreementless INFL to one fully specified for subject-/possessor-agreement.

What all of this might suggest is a three-stage model in the acquisition of the morphosyntax of agreement. In the initial stage, agreement is not marked: consequently, subjects and possessors carry default objective case, and there is no use of possessive 's or third person singular +s. In the second stage, agreement is optionally marked: subjects carry nominative case and verbs carry third person singular s if agreement is marked, but subjects carry default objective case and verbs don't carry third person singular s if agreement is not marked; likewise, possessors carry genitive case and the possessive inflection 's is used if possessor-agreement is marked, but possessors have default objective case and no 's is used if agreement is not marked. In the third stage, children attain adult-like competence, and mark agreement in obligatory contexts, resulting in the correct use of genitive possessors, nominative subjects, possessive 's and third person singular +s in obligatory contexts.

Not surprising, the seemingly clear picture painted above is obfuscated by lexical factors (i.e. by the fact that different lexical items are acquired at different stages). For example, genitive *my* appears in the earliest transcripts, *your* first appears at 3;2, and *his* at 3;6; likewise possessive 's and third person singular s both appear at 3;2 (though the irregular first person singular forms *am/ 'm* appear at 2;8). The obvious consequence of this is that during stage 2 (i.e. the *optional agreement* stage), children's grammars license both agreement-specified and agreement-underspecified structures, but the relevant structures can only be produced if the child has the lexical resources to realise them. So, for example, at age 3;0 Nicolas is at the *optional agreement* stage and so would be expected to alternate between possessive nominals like *my car/me car*, and *Daddy's car/Daddy car*: but because he has acquired both *me* and *my* (but not possessive 's) at this stage, the actual range of possessive structures he produces is *my car/me car/Daddy car*. A further complicating factor is that when a new pronoun form is acquired, it can take several months before it is used productively. It seems likely that newly acquired items are initially difficult to access (becoming easier as time goes by), and this is why we find the observed pattern of a gradual increase in the frequency of their use.

Interestingly, the analysis presented here is consistent with the findings from a study by Ramos and Roeper (1995) of an SLI child (JC) between ages 4;4 and 4;6. JC alternates between objective and genitive possessors (e.g. 56% of his first person singular possessors are objective *me* and 44% genitive *my*), but has 0% use of possessive 's and third person singular s in obligatory contexts. In other words, JC would appear to be at the same stage which Nicolas reached at 2;9. In order to demonstrate that the use of *me* possessors is a competence error (reflecting a grammatical deficit—more specifically, an agreement deficit) rather than a performance error (resulting from e.g. retrieval failure in

the sense of Rispoli 1994, 1995, 1997), Ramos and Roeper conducted a comprehension experiment on JC in which he was asked to match sentences with pictures denoting possession or action. They noted that in response to the following test sentences:

(23) The girl saw me paint/dress/bat/ski

in 4 out of 5 cases JC pointed to pictures denoting possession, suggesting that his grammar systematically licensed objective possessors.

The overall conclusion which the findings reported in this paper lead to is the following. There is an interesting symmetry between the development of subject+verb structures on the one hand and possessor+noun structures on the other. Nicolas seems to pass through an initial *no inflection* stage during which subject-agreement and possessor-agreement are not marked (a stage characterised by the use of objective possessors/subjects and the omission of possessive 's and third person singular s). At around the age 2;6 he seems to enter an *optional inflection* stage at which he alternates between agreement-specified forms like *my car* and *I'm sick* and agreementless forms like *me car* and *Me wet*: however, the fact that different lexical items are acquired at different ages means that some agreement-specified forms (like *Daddy's car* and *It works*) appear later than others. This *optional inflectional* stage lasts until the end of the transcripts at 3;6 (though by then agreement forms are generally well established and strongly preferred where lexical resources permit and where an item is well enough established not to cause retrieval problems). The overall conclusion we reach is that the *optional infinitives* stage which two- and three-year-old children go through should more properly be thought of as an **optional inflection** stage during which both nominal and verbal inflectional heads may be underspecified in respect of the features they encode (the partial features which we have been concerned with here being agreement features).

2.2 Word Order

Subjects. Early word orders in my English data seem to follow two patterns of acquisition. In the first 12 files (1;10-2;6) there seem to be even distributions between the rates of SV and VS Single Argument String (SAS). This symmetry peaks at around file 10 where a 17-to-16 frequency count (VS-to-SV) is found, where the relative frequency of multi-constituent Double Argument String (DAS) to two-constituent SAS-structures is around 3-to-1. At file 13 however, a greater shift towards the usage of multi-constituency DAS-structures occurs, resulting in the dominant use of the target SVO word order. At first glance it seems that the correct setting of SVX ordering at this stage is indeed mostly due to the emergence of multi-constituent strings, notably either the object or the adverbial element, whereas a steep decline in non-target VS orderings results as a consequence. Certain characteristics of VS structures however pose analytical problems. One such marked feature of the VS word order stage in many of the constructions is the domineering presence of either the Copula Verb 'Be', or the 'Bare Past-Participle' ((BPP) bare in the sense that no Aux surfaces). Examples of these two marked 'VS constructions' are given below in (24):

- (24) a. all gone Truck (file 2: 1;10) e. is A car (file 5: 2;0)
 b. all gone Bottle (file 6: 2;2) f. is A duck (file 4: 2;0)
 c/d. all done The car/Me (files 7/16) g. (Cat), is A cat (file 3: 1;11)

It is not entirely clear whether or not these constructions constitute true VS orderings, as the grammatical-categorical status of the Noun and participle can be questioned. For instance, in examples (a-d), the participle might be reinterpreted as having adjectival properties, while the copula in examples (e-g) somewhat complicates matters. Their argument structures may be analyzed as pseudo unaccusative verbs (without Subject raising), or assumptions might be made regarding a phonologically reduced subject via a consonant cluster simplification (as in *It is a car*, its>is>iz--SVO)ⁱ etc.

However, alongside such problematic constructions lie a considerable number of straightforward VS constructions that contain main verbs. The following token examples of VS structures are given in (25) below with analysis in (25'). Note that these examples span the range of ages from 2;6-3;2 demonstrating that word order variance seems to solely rely on the number of arguments which project and no other criteria such as e.g. the functional IP-stage. Hence, such a diverse range of SAS VS projections suggests that the SAS vs. DAS distinction, as laid out here, functions rather in an isolated manner, quite untypical of 'benchmark' criterion which aid in establishing the child's overall stage of development.

This gives the flavor of saying that any talk of 'stages'—noting that by file 14 (age 2;7) we have surely entered into the IP-stage—simply does not adequately describe the nature of the word order variance being produced here, and that we must reconsider the overall notion of an SAS-phase overlapping onto an otherwise functional IP-stage). (See structure and counts overleaf).

- (25) a. kick baby (file 14: 2;7) h. kick me (file 15: 2;8)
 b. run baby (file 14: 2;7) i. eat me (file 17: 2;8)
 c. all break My bike (file 22: 3;0) j. work bike (file 22: 3;0)
 d. open me (file 19: 2;10) k. broke tree (file 23: 3;0)
 e. eat baby (file 12: 2;6) l. want me (file 18: 2;9)
 f. cook daddy (file 15: 2;8) m. hurt car (file 16: 2;8)
 g. help me (file 23: 3;2) n. go plane (file 17: 2;8)

(25')	<u>VS structures with SASs</u>	<u>Token counts of VS SASs</u>			
	VP / \				
	V' Spec	<u>Token counts</u>	<u>SV</u>	<u>VS</u>	<u>SVO</u> <u>Other (xyz)</u>
		(files 8-16): n.	87	78	290 15
	V				
b.'	run baby				
f.'	cook daddy				
j.'	work bike				
n.'	go plane				

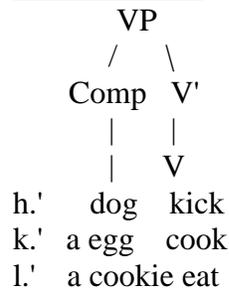
One interesting observation here concerning such (single argument) VS structures has to do with Case assignment. Most verbs found within VS utterances seem to have accusative subjects. This observation becomes rather significant when coupled with other data showing correct nominative case usage at the same stages of development (see (26) and (28) below). In other words, the data seem to demonstrate that when VS order is used, subjects get accusative case and never nominative case. The notion that such orders are the result of ‘Dislocations’ has been largely discredited by negation initial construction, such as Neg-V-S/Neg-O-V. In fact, not one VS construction yielded a nominative subject. The fact that nominative case appears at roughly the same stage may indicate some sort of optional Nominative/Infl stage. However, regarding case assignment to DP, there does seem to be strong evidence that Genitive case is unaffected by variable word order. In fact, the Determiner system emerges fairly early on in the data and is found in a variety of environments (not to mention within language mixing). The following examples in (26) show correct case assignment and word order patterns for the same developmental periods as was shown in examples above.

- | | | | |
|------|--|--|--|
| (26) | <u>NOM: SVO</u> | | <u>DP: SVO</u> |
| | a. <i>I</i> want bottle (file 3: 1;11) | | d. He cut <i>the tree</i> (file 21: 3;0) |
| | b. <i>I</i> want down (file 6: 2;2) | | e. I eat <i>my hair</i> (file 19: 2;10) |
| | c. <i>I</i> don't know (file 8: 2;4) | | d. She going touch <i>my man</i> (3;2) |

Objects. Examples of OV/VO structures are also found throughout the range of the data. Again, recalling our discussion above that word order errors seem to manifest up until the very last file, dependent only on the SAS vs. DAS distinction. Token examples are presented below in (27):

- | | | | |
|------|--|--|---|
| (27) | <u>VO</u> | | <u>OV</u> |
| | a. Kick the dog (file 4: 2;0) | | h. Dog kick (file 3: 1;11) |
| | b. Want my car (file 8: 2;4) | | i. Baby kick (file 11: 2;5) |
| | c. No cut train (file 16: 2;8) | | j. Ball a kick (file 16: 2;8) |
| | d. Cook pasta (file 18: 2;9)
(Dad cooks pasta) | | k. A egg cook (file 20: 2;11) |
| | e. want bottle (file 10: 2;4)
(Baby wants bottle) | | l. A cookie eat (file 21: 3;0) |
| | f. Make a house (file 24: 3;3)
(He makes a house) | | m. No baby hit (file 23: 3;2)
(I don't hit the baby) |
| | g. Work at home (file 23: 3;2) | | |

I think what is crucial to note here is that no overt (INFL)ectional verbal morphology (excluding the copula ‘is’ (e.g., /Izðka: /> Is a car) found in file 5) has yet to surface; that is, all of the VO/OV data suggest that the verb is unspecified for Person. Nominative case however, also an indicator of INFL, does seem to be established in early SV(X) structures, but an asymmetry is found between the use of Nominative case in SV and VS structures. The analysis of OVs and token counts (cf. 27) are given below in (27' & 28):

(27) OV with SASs (cf. 5i)(28) SV & VS Order with Case

	<u>Nom Case</u>	<u>Default Acc Case</u>
SV: (n.418)	128	24
VS: (n.151)	0	32

SV/VS Token ExamplesSVx: *I play, He cut, He do it.*VS: *Eat me, Run baby, Kick baby, Open me. Help me, Work bike.***Notes:**

1. This is the text of a paper presented to the annual convention of the *American Speech and Hearing Association* in November 1997.

2. Following Schütze and Wexler 1996, the notation [+agr] is used as an informal way of indicating that INFL carries a set of person/number features which agree with those of its specifier, and the notation [-agr] serves to indicate that the relevant features are underspecified in some way. The discussion here is simplified in various respects, for ease of exposition. For example, we have marked only whether INFL carries a fully specified set of agreement features or not, and not represented other features (e.g. tense) carried by INFL. We have also ignored the possibility that structures like (7b) may equally result from underspecification of the tense properties of INFL—as claimed in Schütze and Wexler (1996).
Essex Research Reports in Linguistics, vol. 19:

©1998 by ERRL, Radford & Galasso

References

- Chomsky, N. (1981) *Lectures on Government and Binding*, Foris, Dordrecht.
 Chomsky, N. (1995) *The Minimalist Program*, MIT Press, Cambridge Mass.
 Galasso, Joseph (2003) *Acquisition of Functional Categories*. IULC Publication, Indiana University.
 Hoekstra, T. & P. Jordens (1994) 'From adjunct to head', in T. Hoekstra & B. Schwartz (eds) *Language Acquisition Studies in Generative Grammar*, Benjamins, Amsterdam, pp. 119-149.
 Kayne, R.S. (1994) *The Antisymmetry of Syntax*, MIT Press, Cambridge Mass.
 Radford, A. (1997) *Syntactic Theory and the Structure of English*, CUP.
 Ramos, E. & T. Roeper (1995) 'Pronoun case assignment by an SLI child', poster presentation to the annual meeting of the *American Speech and Hearing Association*, 1995.
 Rispoli, M. (1994) 'Pronoun case overextensions and paradigm building', *Journal of Child Language* vol. 21, pp.157-172
 Rispoli, M. (1995) 'Mechanisms of pronoun case errors: biased retrieval, not syntactic incompetence', ms. Northern Arizona University
 Rispoli, M. (1997) 'The default case for subjects in the optional infinitive stage',

- in A. Stringfellow, D. Cahana-Amitay, E. Hughes, M. Hughes and A. Greenhill (eds) *Proceedings of the 21st Annual Conference on Language Development: Vol. 1*, Cascadilla Press, Somerville Mass., pp. 465-475
- Schütze, C. & K. Wexler (1996) 'Subject case licensing and English root infinitives', in A. Stringfellow, D. Cahana-Amitay, E. Hughes and A. Zukowski (eds) *Proceedings of the 20th Annual Boston University Conference on Language Development: Vol. 2*, Cascadilla Press, Somerville Mass., pp. 670-681.
- Schütze, C. (1997) 'INFL in child and adult language: agreement, case and licensing', PhD diss., MIT.
- Wexler, K. (1994) 'Optional infinitives, head movement and the economy of derivation', in D. Lightfoot and N. Hornstein (eds) *Verb Movement*, Cambridge University Press, pp. 305-350.
- Zribi-Hertz, A. (1997) 'On the dual nature of the "possessive" marker in Modern English', *Journal of Linguistics*, vol. 33, pp. 511-537.
-