

## The acquisition of variable word order in two-verb clusters in regional Dutch

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### 1. Introduction: two-verb clusters

Standard Dutch (see all references in Wurmbrandt 2006:237)

	AUXFIN-PART	MODFIN-VINF
Dutch (1=finite)	1-2 2-1	1-2 2-1
Dutch (1=non-finite)	1-2 2-1	1-2

AUXFIN-PART: 2-1/1-2 order

(1) a.	dat	Jan	<i>gewerkt</i>	<i>heeft/</i>	<i>heeft</i>	<i>gewerkt</i>
	that	Jan	worked	has/	has	worked

MODFIN-VINF: 2-1/1-2 order

b.	dat	Jan	<i>lezen</i>	<i>kan/</i>	<i>kan</i>	<i>lezen</i>
	that	Jan	read	can/	can	read

**RESEARCH QUESTIONS** (see also Smith et al. LVC 2007):

- Are variable forms in evidence from the start of the acquisition process i.e. learnt at the same time as categorical forms?
- What effect does input have on the child's acquisition of forms, not only in terms of frequency of use but also external and internal constraints on the variability?
- are the linguistic conditionings (morphology of the deepest embedded verb and type of auxiliary) of the two verb clusters - MODFIN-VINF and AUXFIN-PART - acquired at the same time and in the same way?

### 2. Two-verb clusters: Heerlen Dutch spontaneous speech corpus

Heerlen Dutch corpus: 33,5 hours of recorded spontaneous speech

Table 1: Number of speakers by speaker variables

	low level of education		high level of education		total
	young	old	young	old	
<i>1<sup>st</sup> language/ language background</i>					
immigrant	3	6	5	5	19
dialect	5	6	8	10	29
Heerlen Dutch	8	--	8	3	19
total	16	12	21	18	N=67



Map 1: *The location of Heerlen in the province of Limburg in The Netherlands*

**Individual variation: 1 = finite**

AUX<sub>FIN</sub>-PART:

							15: Peter	
(2)	a.	dus	waar	(...)	X	<i>heeft</i>	<i>gewoo</i>	1-2 order
			thus	where		X	has	<i>lived<sub>part</sub></i>
	b.	waar	X	<i>gewoond</i>		<i>heeft</i>		2-1 order
		where	X	<i>lived<sub>part</sub></i>		has		

MOD<sub>FIN</sub>-V<sub>INF</sub>:

								3: Jansen
(3)	a.	dus	die	een	beetje	<i>lezen</i>	<i>kunnen</i>	2-1 order
			thus	those	a	bit of	<i>read<sub>inf</sub></i>	can
	b.	die	dat (...)	redelijk		<i>kunnen</i>	<i>opbrengen</i>	1-2 order
		those	that	reasonably		can	<i>yield<sub>inf</sub></i>	

33.5 hours of spontaneous speech:

**1.230** tokens of two-verb clusters where 1 = finite:

- **558** tokens of AUX/PASS<sub>FIN</sub>-PART
- **554** tokens of MOD<sub>FIN</sub>-V<sub>INF</sub>

**2.1 Word order variation in AUXPERF/PASS – PART CLUSTER (1= finite or non-finite)**

**VARIATION AT THE LEVEL OF THE COMMUNITY**

**1 = FINITE**

Table 2: *The use of the orders 1-2 or 2-1 in the AUXPERF/PASS-PART cluster at the level of group of speakers (community) in Heerlen; 1=finite*

<b>1= FINITE</b> AUXPERF/PASS-PART	tokens	%
2-1	376	67.4
1-2	182	32.6
total	558	100

*External factors*

- no social stratification regarding age, level of education, language background  
=> STABLE VARIATION

*Internal factors*

- no effect of negation, extraposed PP, tense (past versus present tense ‘have’) regarding 1FIN-2 or 2-1FIN order in AUXFIN-PART cluster (Cornips & Ribbert 2006, Haegeman 1998, Wurmbrandt 2006)

**AUX = NON-FINITE**

Figure 1. The word orders in AUXPERF/PASS-PART when it is complement of a modal; MOD<sub>1</sub> = V<sub>2</sub>, AUX = non-finite in spontaneous Heerlen Dutch

<i>Main clauses: MOD<sub>1</sub> = V<sub>2</sub></i>					
<i>Embedded clauses: AUX<sub>PERF/PASS</sub> = non-finite</i>					
(Mod <sub>1</sub> )	AUX <sub>PERF</sub>	PART	order		
(1)	2	3	2-3	12/40	30%
			3-2	28/40	70%
(Mod <sub>1</sub> -)	AUX <sub>PASS</sub>	PART			
(1)	2	3	2-3	6/68	9%
			3-2	62/68	91%

Figure 2. The word orders in three-verb clusters in spontaneous Heerlen Dutch of the type MOD- AUXPERF/PASS-PART (AUX = non-finite)

<i>embedded clause</i>	<i>order</i>	<i>tokens</i>		
MOD-AUX <sub>PERF</sub> -PART	1-3-2	1		
	3-1-2	1		
MOD-AUX <sub>PASS</sub> -PART	1-2-3	1		
	1-3-2	1		
	3-1-2	19	90%	

**VARIATION AT THE LEVEL OF THE INDIVIDUAL SPEAKER**

**1 = FINITE**

Table 3: *Categorical and variable use of 1-2 and/or 2-1 order in the AUXPERF/PASS-PART cluster in Heerlen at the level of the individual speaker*

<b>1= FINITE</b>	<i>n</i> speakers (67)
categorical use 1-2	1
categorical use 2-1	16
variable use 1-2/2-1	50

2.2 *Word order variation in MODFIN-VINF cluster* (1=finite and non-finite)

**VARIATION AT THE LEVEL OF THE COMMUNITY**

**MOD<sub>1</sub> = FINITE**

Table 4: *The use of the orders 1-2 or 2-1 in MODFIN-VINF cluster at the level of group of speakers (community level) in Heerlen (1=finite)*

<b>1= FINITE</b>	tokens	%
2-1	14	.03
1-2	540	99.97
total	554	100

*MODFIN-VINF cluster: kunnen 'can', moeten 'must', willen 'want', mogen 'may', zullen 'shall'*

Table 5: *The use of the orders 1-2 or 2-1 in ASPFIN- VINF cluster at the level of group of speakers (community level) in Heerlen*

<b>1= FINITE</b>	tokens	%
2-1	1	0
1-2	117	100
total	118	100

*ASPFIN-VINF cluster: doen 'do', laten, 'let', gaan 'go' and blijven 'remain'*

**MOD<sub>2</sub> = NON-FINITE**

Figure 3. The word orders in *MOD-VINF CLUSTER* when it is complement of a modal: MOD<sub>1</sub> = V<sub>2</sub>, MOD<sub>2</sub> = non-finite and in three-verb clusters of the type MOD<sub>1</sub>-MOD<sub>2</sub>-INF (MOD<sub>2</sub>= non-finite) in spontaneous Heerlen Dutch

Main clauses (MOD <sub>1</sub> = V <sub>2</sub> , MOD <sub>2</sub> = non-finite)					
(MOD <sub>1</sub> -)	MOD <sub>2</sub> -	VINF	order	97/97	100%
(1)	2	3	<b>2-3</b>		
Embedded clause					
MOD <sub>1</sub> -	MOD <sub>2</sub> -	VINF	<b>1-2-3</b>	23/23	100%

## VARIATION AT THE LEVEL OF THE INDIVIDUAL SPEAKER

Table 6: *Categorical and variable use of 1-2 and/or 2-1 order MOD/ASP<sub>FIN</sub>-V<sub>INF</sub> CLUSTER cluster at the level of the individual speaker in Heerlen*

<b>1= FINITE</b>	<i>n</i> speakers (67)
categorical use 1-2	55
categorical use 2-1	0
variable use 1-2/2-1	12

### 2.3 Dependencies between the two types of two-verb clusters in which 1 = finite

Figure 1: The individual patterns regarding the 2-1 and 1-2 order both in the AUX<sub>PERF</sub>/PASS-PART and MOD/ASP<sub>FIN</sub>-V<sub>INF</sub> cluster in which 1 = finite

	AUX <sub>PERF</sub> /PASS-PART		MOD/ASP <sub>FIN</sub> -V <sub>INF</sub>	
	2-1	1-2	2-1	1-2
individual grammars				
<b>n=40, 60%</b>	<b>yes</b>	<b>yes</b>	<b>no</b>	<b>yes</b>
n=12, 17%	yes	no	no	yes
n=10, 14%	yes	yes	yes	yes
n=3, 5%	yes	no	yes	yes
n=1, 2%	yes	yes	yes	no
n=1, 2%	no	yes	no	yes
<b>non-occurrence</b>	<b>AUX-FIN<sub>PERF</sub>/PASS-PART</b>		<b>MOD/ASP<sub>FIN</sub>-V<sub>INF</sub></b>	
	<b>2-1</b>	<b>1-2</b>	<b>2-1</b>	<b>1-2</b>
*	yes	no	yes	no
*	no	yes	yes	no
*	no	yes	yes	yes

### 2.4 Empirical findings

#### two-verb cluster in Heerlen Dutch

	AUX <sub>PERF</sub> /PASS-PART	MOD/ASP -V <sub>INF</sub>
Dutch (1=finite/non-finite)	1-2	1-2
=>	2-1	

#### three-verb cluster in Heerlen Dutch

	MOD-AUX-PART	MOD-MOD- V <sub>INF</sub>
	1-2-3	1-2-3
	1-3-2	
=>	3-1-2	

### 3. Acquisition of two types of verb clusters

- no information about caregiver input, only adult to adult interaction

#### 3.1 Expectations

*Smith et al (2007)*: we suggest that a guiding principle in the acquisition of (socio)linguistic competence may lie in whether the variable is a marker or an indicator (Labov 1994:78) in the community in which the child is growing up.

HYPOTHESIS: VARIABLE WORD ORDER CAN ONLY BE ACQUIRED FROM START WHEN VARIATION SIGNALS LANGUAGE CHANGE I.E. HAS SOCIAL MEANING IN COMMUNITY.

- child shows same word order patterns in two types of cluster

#### 3.2 Methodology (taken from Zuckerman 2001)

##### Subjects:

AGE	NUMBER
2;8 - 3;10	n=19
5;0 - 5;11	n=15

*Location*: Heerlen

##### Procedure:

The method used was a question answering task (elicited production), regarding 30 pictures presented to the subjects. The task of answering a question was employed in order to encourage the subjects to begin their answers with *Omdat* 'because', which is a complementizer in Dutch, and by that to encourage the use of an embedded structure. All the questions were therefore *Why*-questions.

##### Example:

- 15 test sentences eliciting AUXFIN-PART

Picture shows Kikker with a ball in the sky (Kikker 'frog' is a known child figure).

Experimenter: "*Kikker throws a ball. The ball is in the sky*" ("Kikker heeft de bal gegooid. De bal vliegt in de lucht")

Puppet: *Waarom vliegt de bal in de lucht?* 'Why is the ball in the sky

Expected answer:

(6) a     *Omdat*     *Kikker de bal*     ***gegooid***     ***heeft***     1-2 order  
         because     Frog the ball     thrown     has

or:

b     *Omdat*     *Kikker de ball*     ***heeft*** ***gegooid***     2-1 order  
         because     Frog the bal     has     thrown

- 15 test sentences eliciting MODFIN-VINF

Picture shows Kikker with skates on the ice.

Experimenter: "*Kikker wants to skate. He is on the ice*" ("Kikker wil schaatsen. Hij is op het ijs")

Puppet: *Waarom is Kikker op het ijs?* 'Why is Kikker on the ice'

Expected answer:

(7) a *Omdat* *Kikker wil schaatsen* 1-2 order  
 because Frog want skate

or:

b *Omdat* *Kikker schaatsen wil* 2-1 order  
 because Frog skate want

### 3.3 Results

#### VARIATION AT THE LEVEL OF THE GROUP

Table 7: *The use of the orders 1-2 or 2-1 in the MOD-INF cluster by the children in Heerlen*

age	children n=19 age =2;8 – 3;10		children n=15 age =5;0 – 6;0	
MOD-INF	tokens	%	tokens	%
2-1	5	9	2	1
1-2	51	91	162	99
total	56	100	164	100

Table 8: *The use of the orders 1-2 or 2-1 in AUX-PART cluster by the children in Heerlen*

age	children n=19 age =2;8 – 3;10		children n=15 age =5;0 – 6;0	
AUX-PART	tokens	%	tokens	%
2-1	4	27	16	19
1-2	11	73	68	81
total	15	100	84	100

#### COMPARISON BETWEEN ADULTS AND CHILDREN; COMMUNITY LEVEL

Table 9: *The use of the orders 1-2 or 2-1 in MOD-INF cluster by adults and children in Heerlen*

	adults 'spontaneous' n=67		children n=34 'elicited'	
MOD-INF	tokens	%	tokens	%
2-1	1	0	7	2
1-2	117	100	312	98
total	118	100	320	100

Table 10: *The use of the orders 1-2 or 2-1 in **AUX-PART** cluster in Heerlen by adults and children*

adults 'spontaneous speech' n=67			children 'elicited' n=34	
AUX-PART	tokens	%	tokens	%
2-1	376	67.4	20	20
1-2	182	32.6	79	80
total	558	100	99	100

#### COMPARISON BETWEEN ADULTS AND CHILDREN; INDIVIDUAL VARIATION

Table 11: *Categorical and variable use of 1-2 and/or 2-1 order in **MOD-INF** cluster in Heerlen by adults and children*

	n adults (67) 'spontaneous'	n=19 age = 2;8 – 3;10	n=15 age =5;0 – 6;0
categorical use 1-2	55 82%	9 81%	14 93%
categorical use 2-1	0	0	0
variable use 1-2/2-1	12 18%	2 19%	1 7%

Table 12: *Categorical and variable use of 1-2 and/or 2-1 order in **AUX-PART** cluster in Heerlen by adults and children*

	n adults (67) 'spontaneous'	n=19 age =2;8 – 3;10	n=15 age =5;0 – 6;0
categorical use 1-2	1 1%	5 71%	6 43%
categorical use 2-1	16 24%	2 29%	1 7%
variable use 1-2/2-1	50 75%	0 0%	7 50%

#### 4. DISCUSSION

##### RESEARCH QUESTIONS:

a) Are variable forms in evidence from the start of the acquisition process i.e. learnt at the same time as categorical forms?

NO: Children start out with categorical rules where there is variability in the adult community (cf Table 12)

b) What effect does input have on the child's acquisition of forms, not only in terms of frequency of use but also internal constraints on the variability?

- Frequency of variable use by adults: no effect;
- Wrt modal cluster: (i) similar word order 1-2, (i) similar frequency - categorical  
Wrt *perfective* cluster: (i) opposite word order, (ii) different frequencies – categorical

#### 4.1 Developmental stages

Are the linguistic conditionings (morphology of the deepest embedded verb and type of auxiliary) of the two verb clusters acquired at the same time and in the same way?

NO

- *acquisitional path*

De Haan (1987), Jordens (1990, 2002), Blom (2003)

stages:

- 1 MOD
- 2 MOD + INF
- 3 AUX + PART

- *type of verbal cluster (children in Heerlen)*

	AUX-PART		MOD-INF	
age 3	15/285	5%	56/285	20%
age 5	84/225	37%	164/225	73%

- Mistakes by the Heerlen children

AUX + INF  
but never \*MOD + PART

- *expected according test design*

AUX-PART replaced by MOD-INF but not the reverse:

(8a) omdat hij voor heeft gelezen  
because he to has read

uttered:

(8b) omdat hij voor wil lezen (Frederique 4;5)  
because he to wants read

#### 5. Tentative analysis

Variable forms (constituting a linguistic variable) in evidence are acquired from the start if variation displays social stratification, i.e. variation signals language change. This case doesn't constitute counterevidence.

	AUX-PART	MOD-INF
age 3	categorical	categorical
age 5	variable	categorical

=> converging towards community pattern

Default behaviour: 1-2 order in two-verb cluster

Overgeneralization 1-2 order in AUX-PART cluster

Claudia 3;5:

OBJ AUX PART

(9) a.    ∅    hij    zo    trommel    heeft kregen  
          he    so    drums    has    received

ADJ AUX

b.    beetje moe was  
      a bit  tired was

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