

EARLY VERB INFLECTION AND NOUN PLURAL FORMATION IN FOUR AUSTRIAN CHILDREN: THE DEMARCATION OF PHASES AND INTERINDIVIDUAL VARIATION

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1. Introduction

This paper deals with the problem of the demarcation of the phases of premorphology, protomorphology and modular morphology, individual differences in the acquisition of one and the same language, exemplified by early verb and noun inflection. It is the first comparative longitudinal study of Austrian (German-speaking) children.

1.1. The data

The children¹ selected for this study represent two different types of acquisition strategies: Lisa and Carola show a so-called "normal" or even early development, whereas Bernd and Katharina are filler children following a prosodic approach and developing more slowly; in Lisa, on the other hand, we find an early beginner who is also using fillers, but to a less extent. Except for temporal differences, however, the four children are following similar acquisition patterns.

Bernd (m, 27.07.93, investigator: Ralf Vollmann) is the younger brother of two sisters and was recorded from 1;5-4;0 (analyzed here: 1;9-3;9). Of the 184 recording sessions 57 have been transcribed; notes have been taken as well. The corpus consists of 4500 child utterances with 8326 tokens (until 3;9). The usual recording situation was free play with the investigator or with sisters/friends. Severe phonetic difficulties at the early stages and extensive use of fillers over a long period are the most characteristic features of Bernd's acquisition which is delayed, compared

¹ The data have been collected and analysed within the project "Vor- und Frühstadien des Morphologierwerbs", funded by the Fonds zur Förderung der wissenschaftlichen Forschung, P10250SPR.

to the other children within the investigated period. Bernd was virtually incomprehensible until 2;0 (Vollmann 1996); his language use is marked by various avoidance strategies at all levels (social, phonetic, lexical, grammatical), and he usually did not like being recorded. Both parents are linguists/phoneticians living in an urban environment. The child is exposed to both standard and dialectal German. During the day, he attends kindergarten where he is also exposed to both Spanish and French – and to foreign accent. According to his production, he is a monolingual German-speaking child.

Carola (f, 07.01.93, investigator: Maria Sedlak) is an individualistic and autonomous child; she has an elder sister and a younger brother; her parents are a teacher and a tax consultant, the mother was at home during the period under investigation. The child lives in a house with a garden and is cared for by her mother and other relatives. She is a monolingual German-speaking child with some exposure to dialectal forms. Carola may be called an early beginner with a straightforward development. Recordings in free play situations have been made from 1;2 to 3;0, of 50 recording sessions 32 have been transcribed so far, giving 3417 child utterances with 8794 tokens.

Katharina (f, 03.01.92, investigator: Brigitta Müller) is a shy, reserved child with a very strong attachment to her mother; she can be characterized as a late beginner having phonetic difficulties similar to Bernd (above), but advancing more rapidly later on (Müller 1997). Her parents are a teacher and a student, the mother being at home during the recording period. Although her mother is a German-Hungarian bilingual, the child is a monolingual German-speaking child with exposure to dialect variants. Recordings in free play situations have been performed from 1;4 to 3;0, thus giving 36 sessions with 3304 child utterances and 5239 tokens.

Lisa (f, 24.02.92, investigators: Britta Knapp, Maria Vassilakou) is a lively, talkative child without siblings; she is an early beginner with a rapid development (Knapp 1996). Her parents are university students living in an apartment; the child does not attend kindergarten. She is exposed to standard German and to Austrian dialect, thus a monolingual German-speaking child. During 1;4–2;0, 13 recording sessions were performed and analyzed, thus covering the pre- and the protomorphological phase of language development with 3940 child utterances and 10246 tokens.

1.2. General comparison of the four children

Bernd and Katharina are similar in their early approach to language acquisition, showing phonetic difficulties and avoidance strategies restricting language use mainly to deixis and to paralinguistic² utterances. Both show a prosodic approach to language, Katharina through songs, Bernd through correct copying of adult intonation patterns.

Bernd and Carola have in common a regression phase during the early time of

² 'Paralinguistic utterances' are utterances which are not at all based on target linguistic forms, completely child-specific and the child's own invention, but bear a specific meaning. They are extremely frequent in Bernd's and Kathi's earliest stages.

exposure to a younger child; for Carola, this is the birth of a younger brother, whereas for Bernd it's his loss of the baby status in the kindergarten at 3;9, when a 2-year-old infant came to this institution. Both children regressed into a mixed babbling/baby talk phase in order to maintain their social position.

Contrary to Bernd, Carola's acquisition strategy is much more based on repetitions of adult models, which is to some extent also true for Lisa. Bernd repeated utterances only rarely and in secret, i.e. with a low voice, and only later (in modular morphology) turned back to this means of acquisition.

1.3. Aspects of German grammar

1.3.1. Sociolinguistics

Austrian children are confronted with 3 variants of German: Austrian dialect(s) (AD), Standard Austrian German (SAG), and (common) Standard German (SG) (for sociophonology cf. Dressler and Wodak 1982, Moosmüller 1987, 1992, Moosmüller and Vollmann 1994, 1996). This complicates the situation especially in the acquisition of verbs, where paradigmatic differences possibly make it much less obvious for children which form to acquire.

Table 1. Differences in verb paradigms in AD, SAG and SG.

Gram- matical Form	Variety			Gloss
	Austrian Dialect (AD)	Standard Austrian German (SAG)	Standard German (SG)	
Pres 1p	i hy:f	ich helf	ich helfe	'I help'
Pres 2p	du hyfst	du hilfst	du hilfst	'you help'
Imp	hy:f me	hilf mir	hilf mir	'help me!'
Cop	eg is	er is	er ist	'he is'
Art Indef	e	ein	ein	'a'

1.3.2. Definite article

German nominal morphology encodes gender, number, and case (Helbig and Buscha 1984: 229ff.). All these functions are only weakly coded by suffixes and are more regularly expressed by the articles and other determiners. The following table shows the paradigmatic organisation of the German Def Art system (SG):

Table 2. Definite articles in German.

Case and number	Gender		
	m	f	n
Nom Sg	der	die	das
Dat Sg	dem	der	dem
Acc Sg	den	die	das
Nom Pl		die	
Dat Pl		den	
Acc Pl		die	

1.3.3. Noun plural

The most salient feature of nominal inflection is plural formation; although there are various noun paradigms, only 3 microclasses (Dressler 1997) are productive, those in *-e* (masc., neut.), *-en* (fem.), *-s*; the microclass *-e* + umlaut of the stem vowel is also productive.

Table 3. Noun plural formation in German: Productive microclasses.

Gender	-s			-e		-e+Uml	-(e)n
	m	f	n	m	n	m	f
Nom Sg	Park	Pizza	Kino	Schuh	Pferd	Zug	Blume
Pl	Parks	Pizzas	Kinos	Schuhe	Pferde	Züge	Blumen
Dat Pl				Schuhen	Pferden	Zügen	
gloss	'park'	'pizza'	'cinema'	'shoe'	'horse'	'train'	'flower'

All other plural formation devices are unproductive, i.e. restricted to a closed class of words; those are, in principle, *-0/r, l, n*, *Uml*, and *-er* with or without umlaut (for details cf. Helbig and Buscha 1984: 239ff.).

Table 4. Noun plural formation in German: Productive non-iconic and unproductive microclasses.

Microclass	Productive (but non-iconic)	unproductive	
	<i>-0/r,l,n</i>	Uml	-er (+Uml)
Case and Gender	m, f, n	f	n
Nom Sg	Computer, Kabel, Mädchen	Vogel	Rad
Pl	Computer, Kabel, Mädchen	Vögel	Räder
Dat Pl	Computern, Kabeln, Mädchen	Vögeln	Rädern
gloss	'computer', 'cable', 'girl'	'bird'	'wheel'

1.3.4. Verb inflection

German verbs encode tense, person, number, mood, and voice (cf. Helbig and Buscha 1984: 23ff.; Behrens 1993: 14ff.). In German verb inflection, productive "weak" and unproductive "strong" verbs are distinguished, e.g. *leben* 'live' vs. *helfen* 'help':

Table 5. Verb inflection in German: Productive *leben* vs. unproductive *helfen*.

Pres	Sg	Pl	Inf	Sg	Pl	Inf
1	leb-e	leb-en	leb-en	helf-e	helf-en	helf-en
2	leb-st	leb-t	PP	helf-st	helf-t	PP
3	leb-t	leb-en	ge-leb-t	helf-t	helf-en	ge-holf-en

Spoken Austrian PP have no prefix *ge-* (AD *bokŋ* ← SG *gebacken* 'baked') before stops, and *g-* otherwise (AD *g-moxt*, SAG *g-mach-t* ← *ge-mach-t* 'done'). Periphrastic constructions are:

Table 6. Periphrastic constructions in German

Perf	Ich habe X geschlagen	I have beaten X	Aux+PP
Pass Stat	Ich bin geschlagen	I am beaten/defeated	Cop+PP
Pass Evt	Ich werde geschlagen	I am/will be beaten	become+PP
Modals	Ich will X schlagen	I want to beat X	modal+Inf

The imperative is represented as stem only, e.g. *schau!* 'look!' ← *schau-en* 'to look', but in verbs with alternating stem vowel (*ich helfe* – *du hilfst*), the umlaut vowel is used (*hilf mir!* 'help me!').

The Preterite does not exist in SAG – except for *war* 'was'³, and 2/3Sg Pres umlaut is mostly neutralized (e.g. (AD) *du la:fst* – (SAG) *du laufst* ← (SG) *du läufst* 'you run').

2. Analysis

The demarcation of phases in the acquisition of morphology has proved to be one of the major fields of interest for participants in the international project on pre- and protomorphology. While Dressler and Karpf's (1995) model did not explicitly foresee transitional phases, these were inherent in the model (system dissociation phases) and have consequently been claimed by various researchers (e.g. Kilani-Schoch et al. 1996) in order to cope with the collected data. We want to contribute to this discussion by presenting empirical evidence from the children investigated in Vienna.

³ Modal verbs also have preterite forms in AD and SAG adult language, but not *haben* 'have'. Other preterite forms than *war* cannot be observed in children except for imitations of fairy tales etc.; the sisters of Bernd between 5;0 and 6;0 overgeneralized umlaut *-a-* as strong verb narrative style form: *gang* ← *ging* 'went', *la:f* ← *lief* 'ran', etc.

2.1. The premorphological phase

During the first onset of language acquisition, children seem to be completely functionally motivated (object relations) and have no notion of grammaticality (linguistic relations), but rely on more general (cognitive) principles (cf. Dressler and Karpf 1995). Thus, children tend to rote-learn forms with pure lexical value. Extragrammatical (e.g. onomatopoeics; cf. Dressler and Merlini Barbaresi 1994: 36-41) and paralinguistic operations (e.g. Bernd's [hʊ] = 'show me the next one!', 'turn the page!') seem to be isofunctional with grammatical (linguistic) means (e.g. naming). At the end of the phase, productive use of extragrammatical operations marks the onset of the development of morphological means (e.g. reduplications, blends; cf. Dressler and Karpf 1995).

Bernd's premorphological phase starts at 1;5 and ends only at 2;6. His acquisition is mainly marked by severe phonetic difficulties (Vollmann 1997) and a formulaic approach to language acquisition (cf. Peters and Menn 1993) with very restricted application of linguistic means to deictic marking and a few action-related speech acts (Vollmann 1996). In this phase, (intonationally identifiable, but incomprehensible) holophrases, paralinguistic/extragrammatical utterances and rote-learned deictic phrases (amalgam *daisda+X* 'there-is-the-X') dominate the first subphase (1;5-2;0). There is an increase of 1-word utterances in a second subphase with an increase in filler+noun usage (2;1-2;2), but marked by various (phonetic, lexical, pragmatic) avoidance strategies. In a third subphase (2;3-2;6), Bernd becomes more understandable and turns to more general acquisition strategies with 1- and 2-word utterances and a more rapid lexical development. Child-specific deictic amalgams which are only partially similar to target forms (*daidija* ← (?) *da ist ?es/sie/... ja* 'There it is', etc.) and two-word utterances, e.g. predications with separable verb prefixes as protoverbs, but without verbs (*lagi gəg* ← *Lastwagen weg* 'truck away'), can be observed. At the end of the stage, the amalgam *daissie* ← *da ist sie* 'There she is' among earlier *daisa* ← *da ist er* and *daises* ← *da ist es* is overgeneralized, e.g. *daissie Papa* 'There-she-is dad'. Bernd does not use any verbs (except for *is* 'is' in holophrases) or plural forms. Thus it may be stated that there is a strict prosodic approach to referring to and naming objects (and nothing else) at this stage. He does show a certain awareness of the relevance of the prenominal position which is increasingly represented by fillers (cf. Kilani-Schoch et al. this volume).

Carola's premorphological stage (1;2-1;11) is marked by the (successive) use a) of deictics (*da* 'there'), b) of paralinguistic and extragrammatical utterances (mainly onomatopoeics), and c) of nouns (increasing at 1;8). Her phonetic variations of words do not carry any morphological meaning. No Dim or Pl forms are produced at this stage. Verbal meaning is expressed by baby talk forms (e.g. *eiei* = *streicheln* 'caress') and, similar to Bernd, by separable verb prefixes such as *auf* 'up', *aus* 'off'. Rote-learned verb forms occur occasionally at the end of the stage (e.g. Imp Pres 2Sg *schau!* 'look!').

Lisa (1;0-1;7), the early beginner child, uses schwa-type fillers (ə *da* 'F there') at the beginning which soon turn into target-similar sequences of the type d + vowel (cf. German Def Art *der, die, das* 'the'), while predeictic fillers with schwa

persist. As with the other children, no Pl forms are observed, but rote-learned verbs do occur: at 1;4 Imp 2Sg (*komm!* 'come!', *geh!* 'go!', *laß!* 'let!'), Cop 3Sg (*ist* 'is'), and Inf at 1;06 (*zeigen* 'show').

With Katharina (1;8-2;3), a late beginner, 3 premorphological subphases may be distinguished: in a first subphase (1;8-1;10), she produces – similarly to Bernd – almost exclusively paralinguistic utterances (vocalisations, e.g. *äh!* 'Eh!'). In a second subphase (1;11-2;1), she mainly uses extragrammatical operations (onomatopoeics) and incomprehensible intonational phrases containing at most one understandable word (formulaic approach, cf. Peters and Menn 1993). During the first and second subphase, she frequently avoids spontaneous speech and uses language mainly in nursery rhymes and songs, whereas in a third subphase (2;2-2;3), she enters into a 1- and 2-word stage. Of all nouns at that stage, only the rote-learned Pl *Ostereier* 'Easter eggs' appears (without its SG counterpart *Osterei*). Except for very few rote-learned phrases, no verbs (1%) occur in this phase, but separable verb prefixes are used to code verbal meanings (*weg* 'away', *zu* 'closed', *auf* 'up').

The earliest word classes to be observed in the four children's speech are deictics and nouns used for reference and naming. Verbs do occur late, but German separable verb prefixes occur early with an action meaning (e.g. *auf* = *du sollst AUFdrehen* '(you should switch) ON'). The most salient linguistic operation in all children is deixis, often performed by operators of identification of the type *da+is* 'there+is' and derivatives (*daisa* ← *da ist er* 'There he is'). In the second place, we find paralinguistic (interjections) and later extragrammatical operations (Onomat).

To conclude, the premorphological phase is marked by the absence or unanalyzability of morphological material, there is thus yet an absence of morphological understanding. There seem to crystallize two approaches to language acquisition at an early age, namely a prosodic one (Bernd, Katharina) and an "isolating" one (Lisa, Carola). Three children (except for Lisa) show 3 subphases indicating more "restricted notions" of language (paralinguistic utterances, deixis, naming) which in two cases delay the acquisition process.

2.2. Transition between pre- and protomorphology

At the end of the premorphological phase (2;3), Katharina, one of the two late beginners, shows a sharp increase in morphologically marked word forms; thus we suddenly find 4/9 Pl forms (*B(l)ume-n* 'flowers', *Osterei-er* 'Easter eggs', *Kin(d)-er* 'children', *Bäum-e-n* 'trees-Pl') and a series of inflected verb forms (36 = 13,7% of the child's lexicon): 3/3 Pres 1Sg, 2/2 Pres 2Sg, 16/23 Inf, 4/8 Imp 2Sg, 4/5 PP and 6/11 stem-only forms such as *Mami (sch)läf-0* 'mum sleep-0'. Still all inflected forms seem to be rote-learned.

Lisa proceeds quite quickly with morphology at 1;7: (non-dialectal) Indef Art (*ein* 'a') is observed, Nom and Acc are distinguished for the first time, 1/1 PP and 1/1 prefix verb can be observed. Interestingly, Def Art is avoided or replaced by a neutral filler form *d(e)* at that stage, but it cannot be decided in each case whether the child produces dialectal Indef Art (a-schwa) or FILLER:PRENOM (schwa). Contrary to the other children, Lisa also uses inflected verb forms of the types

Imp 2Sg, Pres 3Sg, PP, and even Imp 1Pl (e.g. 1;8 *tuma Buch lesen* 'let's read a book').

A transition phase for Bernd cannot be stated clearly; after achieving some degree of understandability between 2;0 and 2;2 and quite a long phase of avoidance (and of mainly 1-word utterances) from 2;3 to 2;6, we find protomorphological operations only at 2;7.

Thus, the transition phase is marked either by an increase in the imitating capabilities of the child (Lisa, Carola, Katharina) or by withdrawal and avoidance (Bernd).

2.3. The protomorphological stage

The protomorphological stage is a first stage of creative/active morphological development. The strategies, however, are not necessarily similar to those of the target language. A child seems to adopt the model of some agglutinating device for marking various cognitive concepts such as plurality or person, but does so with heavy pattern selection⁴, i.e. the child's approach to morphology is marked by the suppression of the 'variation' represented in the paradigmatic organisation and the favourisation of the most productive class(es) (overgeneralisation) (cf. Dressler 1997).

Bernd (2;7–2;11) enters this stage with a decrease in extralinguistic utterances and an increase in filler usage. As will be seen later, fillers seem to be the milestone for morphological awareness in this avoidance-prone child (cf. Kilani-Schoch et al. this volume).

One of Bernd's peculiarities are his three successive approaches to Art usage: three times during pre- and protomorphology, he starts to use phonetically target-similar Art fillers in a single recording, but gives them up again twice. Only at the end of this stage does he keep on using Def Art, but still heavily relies on fillers replacing them, e.g. *hə Bernd* 'the Bernd'. At the end of the stage, fillers also replace finite verb forms (plus subject pronouns), mostly giving intonational patterns identical to adult sentences: *hehe trinken = Ich will trinken* '(I want) to drink'.

At 2;7, Bernd suddenly and briefly (during a few days, unfortunately not in the presence of the microphone) uses and overgeneralizes the (productive) *-n*-Pl rule: *fuss-n* ← *Füße*, *baum-en* ← *Bäume* 'trees', etc.; no other Pl forms are observed (except for rote-learned 1/1 *Räder* 'wheels, no *Rad* Sg), but with many examples of avoidance and refusal (Fat *viele Spielplätze!* 'many playing grounds!' Ber *jaꝑ pi:lplats* ← *Nein, Spielplatz!* 'no, playground!'); from 2;8 onwards, few instances of *-n*-PL can be observed: *Schiene-n* (3), *Blume-n* (6). Thus, Bernd is extremely selective and only uses *-n*-PL at that age. After various corrections, he widely avoids Pl again, and it takes 3 months (2;10) until he starts using (productive) *-e*-Pl: *Haar-e* (5) *Fisch-e* (2), *Krokodil-e* (1) besides *-n*-PL. Plurality, however, is expressed only on the noun and not on its determiners: Still, at 2;11, there is no agreement between

⁴ Pattern selection by the child means that the child is selective in the choice of grammatical entities; it cannot be analysed here whether it depends also on the input frequencies, a) since we do not have frequency analyses of German at hand, and b) since child-directed speech in the four corpora, in a lexicon analysis, does not vary greatly.

viele 'many' and the noun. At that age, there are still no *s*-Pl, and only one umlaut-Pl (2;10: 1/1 *Füße* 'feet', but 2;11: 1/3 *Füssen* 'feet-s') (even) in echo utterances.

At the same stage, Bernd also starts using verbs: at 2;7: Pres 3Sg *weint* 'cries', at 2;8 Inf and Imp 2Sg *essen* 'to eat', *schau mal!* 'look!', at 2;9: PP, e.g. *gangen* 'gone', Imp 1Pl; never more than 2 forms per verb can be observed, except for one single verb *gehen* 'go' which occurs in various inflected forms (*geht* 'functions/goes', *geh* 'go!', *gehen* 'go:Inf', *gangen* 'gone, away, empty'). Bernd acquires only the semantically most prototypical verb forms (*schau!* 'look:Imp', but *weint* 'cries'), and no paradigms can be identified. At 2;11 particular fillers of the type *hehe+Inf* are found which are most probably functionally replacing the target forms Pron Pers plus modal verb.

Table 7. Increase in Pl forms at the protomorphological stage of Bernd.

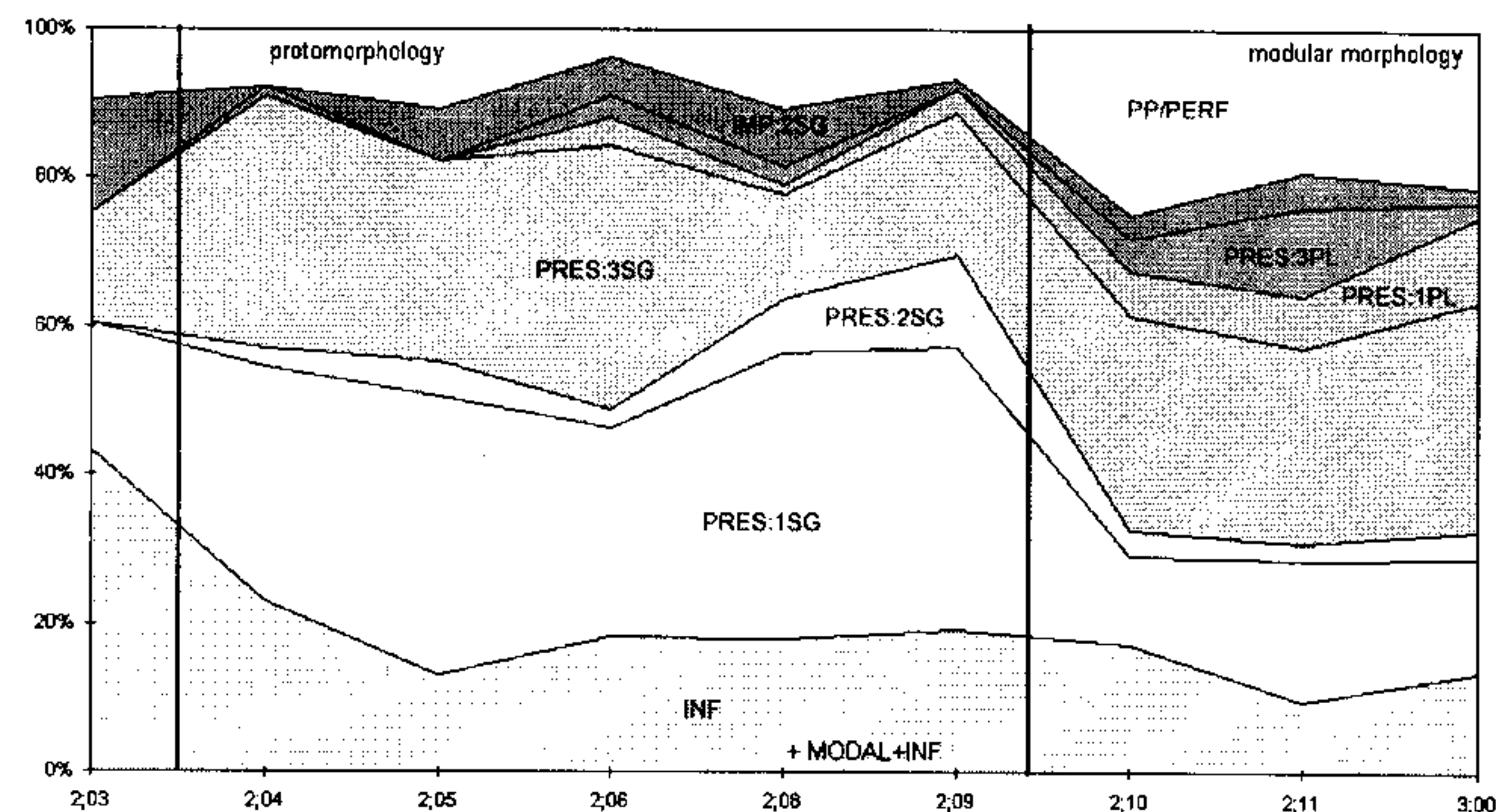
2;07	2;08	2;09	2;10	2;11
[concept "viele"]	viele 0 (avoidance)	viele 0 (avoidance)	viele + SG 7, viele Wasser; Fuss-n viele, Dino Dino 2	viele+SG 1, Affe zwei 1, viele 1, viele+Pl 1, alle + Pl 1
	Schiene-n 1, (Sg.Schiene 0)	Schiene-n 2, (Sg.Schiene 2)	Blume-n 5	Blume-n 1
		Mäus-e 1 (echo)	Haar-e 5	Fisch-e 2, Krokodil-e 1, (Krokodil 2)
[Fuss-n], [baum-en]			Fuss-n 1, Füße 1 (echo)	Füss-en 3
Räder 1 [no Rad]			Auto-0 3	Auto-0 1

Table 8. Bernd's acquisition of verbs by adult categories (tokens); only at 2;10 do many verbs occur in the data.

Grammatical category	2;7	2;8	2;9	2;10	2;11
Pres:3Sg	5	1	4	34	6
Indecl	1	2	4	39	3
Inf	0	1	2	4	5
Imp:2Sg	0	1	0	3	2
PPP	0	0	1	1	2
Imp:1Pl	0	0	1	0	0
Pres:1Sg	0	0	0	2	0
Imp:2Sg:CLIT	0	0	0	1	0

Katharina (2;4–2;9), as far as noun Pl is concerned, shows a very similar development to Bernd: from 2;4 onwards, Pl forms in *-e* and *-n* are observed (2;4 *Schuh-e* ‘shoes’, *Blume-n* ‘flowers’, *Auge-n* ‘eyes’; 2;5 *Erbse-n* ‘peas’, 2;6 *Blume-n* ‘flowers’, one unproductive class member *Füße* ‘feet’, and the overgeneralized form *Handschuh-e-n* ‘gloves’). Thus, Katharina appears to be less pattern selective insofar as she acquires the *-e* and *-n* Pl at the same time. Contrary to Bernd, verbs emerge strongly in Katharina at that stage: 46/86 Pres 1Sg, 28/58 Pres 3Sg, 6/10 Pres 2Sg, 37/54 Inf, 20/23 PP, but no paradigms can be observed, or only small fragments of paradigms, since, similarly to Bernd, verbs do not occur in more than two (three) different morphological forms.

Figure 1. Katharina's verbal categories (in %, not showing the steady increase of tokens).



Carola (2;0–2;6) shows only few Pl forms in *-e* and *-n*: *Haar-e* ‘hair’, *Karotte-n* ‘carrots’, *Blume-n* ‘flowers’, thus similarly pattern-selective to Katharina. Like Bernd, Carola does not mark nominal Pl when Pl is expressed by *viele* ‘many’ (*viele* + Noun Sg). Concerning verbs, the protomorphological phase in Carola starts at 2;0 with the emergence of Inf and PP (e.g. *umdehn/umdedeht* ← *umdrehen/umgedreht* ‘turn(ed) around’). At 2;1, Pres 3Sg is observed (e.g. *ghört da Puppe* ‘belongs here doll’), whereas she uses stem forms only for other inflected forms (see below). At 2;2, Imp 2Sg, Imp 1Pl, and Pres 1Sg emerge. At 2;5, modal verbs emerge.

Stem forms are used by all investigated children, e.g. Bernd's *der Papa baubaubau* ← *bau-t* ‘The dad build-build-build’, Katharina's *Mami läf* ← *schläf-t* ‘Mummie sleep-0’, Lisa's response to *da pickt der Hintern* ‘There the bottom glues’ is *pick-0 Hintern* ‘bottom glue-0’, in Carola, stem forms are observed from 2;1 to 2;11, e.g. 2;1 *abbrech-0* ‘break-0’, *auch eines hole-0 Hammer* ‘also one fetch ham-

mer’, 2;2 *auch helf* ‘also help-0’, 2;4 *ha noch ein Ei* ‘has-0 still one egg’, 2;5 *geh nicht immer Cassette* ‘go-0 not always cassette’, 2;7 *ein Haus zu geh-0* ‘a house to go-0’, 2;10 *der brauch-0 ein Stockerl* ‘this one need-0 a footstool’, etc.; these forms are not due to phonological incapacities, as the respective consonant clusters are pronounced elsewhere (*oft* ‘often’, *braucht* ‘needs’). In Bernd however, stem forms appear more often at later stages, where they seem to become one of several (simultaneous) avoidance phenomena, e.g. 3;9 *ich will pi:l* ← *ich will spiel-en* ‘I want to play’.

Lisa (1;8–1;9), the most precocious child in this sample, has a surprisingly short protomorphological phase in which she extends the use of Indef Art and of the Nom/Acc distinction. Few *-e* and *-n* Pl forms, but no other Pl classes are observed. Lisa's verbal morphology becomes richer with Pres 3Sg, PP, verbal prefixes, Past of the Cop, and Pres 1Pl at 1;08. Although the child advances quite quickly, for the two months in question, still no paradigmatic organisation can be observed, since verbs occur in one or two different forms only, e.g. ‘wait’, ‘look’ only in Imp 2Sg, most other verbs only in Inf, *wehtan* ← *wehgetan* ‘hurt:PP’ only in PP. Other verbs, e.g. ‘come’ occur in two (homophonous) forms: *komm her!* ‘come here!’ and *komm gleich* ‘(I) come soon’ (as in adult language).

To conclude, none of the children either uses *-s*-Pl or any unproductive Pl class, i.e. they are pattern selective in that they overgeneralise only two (productive) Pl forms, those in *-e* and in *-n*.

As for verbs, all children show a similar acquisition pattern with Inf/PP/Pres: 3Sg and soon afterwards Imp 2Sg/Pres 1Sg being the earliest encoded categories. Morphotactically, the use of inflected, not rote-learned, verb forms seems to mark the beginning of the protomorphological phase, while Modal+Inf constructions mark the approaching end of the phase.

Bernd who does not use any verbs during premorphology, develops slowly in verb morphology but shows an intonational pattern similar to Modal+Inf at the end of the stage, obviously avoiding the new pattern of which he seems to be aware. It can be assumed that this avoidance strategy, like all others, are due to the still remaining problems he has in sequencing longer phonemic chains or in cognitive processing, as his speech is still marked by a kind of hesitating pronunciation which cannot keep pace with the intonational pattern, almost giving the image of a stutterer. This severe articulatory handicap does not seem to disturb his linguistic development, however, but it does slow it down.

Protomorphology in German thus provides children with Art, variable verbal mini-paradigms, nominal plural, and finally Modal+Inf constructions. After this acquisition phase, in all children a clear transition phase can be observed.

2.4. Transition between protomorphology and modular morphology

The transition phase between the protomorphological and the modular morphological stage is a phase in which morphology and syntax separate. Indeed, all children show the emergence of target syntactic patterns, in this case of SVO, SV₁OV₂ and question VSO structures, and finally the extension of morphological forms to less productive classes, i.e. paradigmaticity.

It is only now that Bernd (3;0–3;3) partly starts using Def Art and Indef Art in target forms.⁵ At the same time, Art-replacing fillers decrease in number, while the overall number of fillers remains relatively high, as they now replace other function words such as question words, subordinators, Pron Pers, and the like. Also, a pre-infinitival filler emerges (cf. Kilani-Schoch et al. 1997).

Carola (2;7–2;9) and Katharina (2;8–2;9) show significant syntactic progress, and Lisa (1;9–...) enters the 3-word stage, shows first occurrences of Dat, and an increase in Def Art usage.

Pl formation now extends to *-s* Pl forms in Bernd (2/3: *Dino-s* 'dinosaurs', *Auto-s* 'cars') and in Lisa (1/1 *Papi-s* 'daddies'), with *-n* and *-e* remaining the most frequent forms (Bernd: 5/8 *-n*, 4/7 *-e*; Lisa 18/49 *-n* and *-e* (e.g. *Bär-en* 'bears', *Pupp-en* 'dolls'), but 2/2 *-er* (*Handtuch-er* 'towels') and 1/1 *-s*; in Carola, the *-n* forms increase, and in Katharina, we still find exclusively *-e* and *-n* Pl forms). At this stage all children show agreement between *viele* 'many' and the noun. Lisa seems to be insecure about Pl: during one conversation, she uses Pl forms instead of Sg: *CHI: Bären* 'bears' – *INV: Bären? Ich seh nur einen!* 'Bears? I only see one!'; *CHI: Puppen* 'Dolls' – *INV: Eine Puppe* 'a doll' – *CHI: Puppe* 'doll' – but this could also be due to AD *Puppm* 'doll Sg' and AD *an Bärn* 'a bear:Obl'. Various Dim occur (Lisa): *Vog-erl* 'birdie', *Bär-le* 'bear:Dim', and also *sitz-i* 'sit:Dim'. Whereas Bernd has inflected adjectives during the protomorphological stage, Lisa only now starts using noun-adjective agreement.

Both Bernd and Carola show many overgeneralisations of *-n* Pl:

Bernd: *Hund-e-n* ← *Hund-e* 'dog-s-Pl', *Schuh-e-n* ← *Schuh-e* 'shoe-s-Pl',
Räd-er-n ← *Räd-er* 'wheel-s-Pl', *Mäus-e-n* ← *Mäus-e* 'mice-Pl';
 Carola: *Brot-e-n* ← *Brot-e* 'bread-s-Pl', *Bein-e-n* ← *Bein-e* 'leg-s-Pl'.

While no other paradigmatic shifts can be observed, these examples clearly show that the *-n* Pl is the only productive class for the two children. This peculiarity coincides with the use of *viele* 'many' plus Noun Pl, thus making numeral marking obligatory, i.e. the concepts of plurality and number agreement converge with productive use of this Pl marker.

Verbal morphology is marked by many new morphological categories being introduced which leads to the formation or extension of paradigms, thus probably destabilizing or overloading the children's protomorphological systems. In Bernd, Pres:1/2Sg/3Pl emerges, in Carola Perf:1/3Sg, Modal+Inf (*ich kann fahren* 'I am able to drive'), (rote-learned) *Pres:3Pl (*sie *spielt* 'they *play-s'), Pres 1Sg (but still also replaced by Inf: *ich mitfahren* 'I accompany:Inf'), and in Katharina Pres:1/3Sg, 1/3Pl. Contrary to the other children, Katharina overgeneralises the weak conjugation PP forms to strong verbs: *gehalten* ← *gehalten* 'held'. Bernd, on the other hand, after having used correct strong PP forms in the earlier stage (*gangen*

⁵ It must be mentioned here that Bernd uses Art without any notion of GENDER, CASE, or NUMBER.

⁶ The AD case system distinguishes only subject and non-subject in nouns (different to PRON inflection).

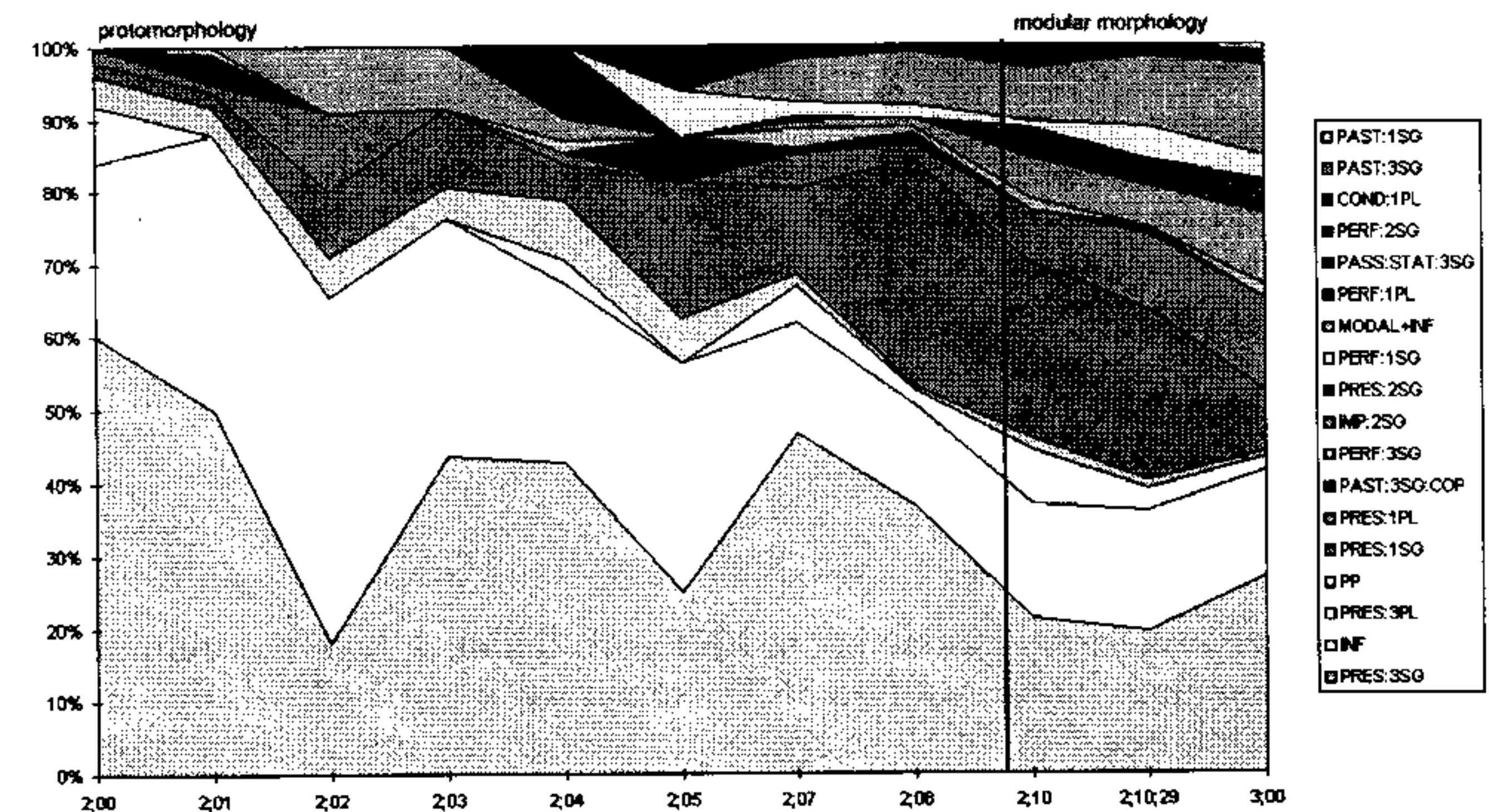
← *gegangen* 'gone'), changes to a mixed class approach avoiding the strong ablaut, but keeping the *-en* suffix (*geschneiden* ← *geschnitten* 'cut:PP'). Interestingly, he extends this morphotactic pattern also to weak verbs (*həbohren* ← *gebohrt* 'drilled'). Again, Bernd and Katharina are quite pattern selective, although they temporarily rely on different target forms in their respective approaches.

Table 9. Bernd's PP forms (in the recorded material; not counting written notes)

	weak PP	strong PP	wrong weak PP	wrong strong PP
Protomorphology	3/4	3/8	0/0	0/0
Transition phase	1/1	2/3	0/0	1/1 ⁷
Modular morphology	14/17	15/35	4/6	2/3

Lisa acquires Modal+Inf constructions (*muß ich mir anzieh'n* 'have to put on'), and Inf and Pres:1/3Sg are productively used now, while Perf forms only begin to emerge.

Figure 2. Carola's verbal categories during protomorphology and at the beginning of modular morphology.



⁷ Without counting notes from that stage; these forms have been observed more often, also of weak verbs, e.g. *ge-kauf-en* ← *gekauft* 'bought', *gemachen* ← *gemacht* 'made', etc.

Carola's acquisition of verbal categories emerges in protomorphology (2;0–2;6) with Inf, Pres 3Sg, and PP forms; during this phase, however, no paradigm organisation can be observed, since verb types occur only in one, two, or, rarely, three different inflectional forms; as can be seen in the following tables, paradigms extend more systematically only from 2;7 onwards, i.e. during the transition to the phase of modular morphological organisation.

Table 10. The development of the paradigm of Aux/Cop *sein* 'to be' in Carola

Category	Word	Form	2;00	2;01	2;02	2;03	2;04	2;05	2;07	2;08	2;10	2;11	3;00
Pres:1Sg	sein	bin	0	0	0	0	0	0	1	1	0	1	1
Pres:2Sg	sein	bist	0	0	0	0	0	0	0	0	1	0	0
Pres:3Sg	sein	is	28	28	4	14	12	2	90	52	15	16	10
Inf	sein	sein	0	1	2	0	0	1	0	0	0	0	0
Pres:3Pl	sein	sind	0	0	0	1	0	0	7	3	6	3	0
Pres:1Pl	sein	sind:1Pl	0	0	0	0	0	0	0	0	0	1	0
Pres:1Pl	sein	sindma	0	0	0	0	0	0	0	0	0	1	0
Past:Cop	sein	war	0	4	0	0	0	1	0	3	0	2	0
Past:Cop	sein	waren_ma	0	0	0	0	0	0	1	0	0	0	0
Past:Cop	sein	waren_wir	0	0	0	0	0	0	1	0	0	0	0

Table 11. The development of the paradigm of *schauen* 'to look' in Carola

Category	Word	Form	2;00	2;01	2;02	2;03	2;04	2;05	2;07	2;08	2;10	2;11	3;00
Inf	schauen	anschauen	0	0	0	0	1	0	0	0	1	0	0
Inf	schauen	durchschauen	0	0	0	1	0	0	0	0	0	0	0
Imp:2Sg	schauen	schau	0	0	0	1	0	0	3	1	7	2	9
Pres:1Sg	schauen	schau:1Sg	0	0	0	0	0	0	1	2	0	0	0
Inf	schauen	schauen	2	1	0	0	0	0	1	0	0	1	0
Pres:3Pl	schauen	schauen_an	0	0	0	0	0	0	1	0	0	0	0
Pres:1Pl	schauen	schauma	0	0	0	0	0	0	1	0	1	0	0
Pres:2Sg	schauen	schaust	0	0	0	0	0	0	0	0	0	3	1
Pres:3Sg	schauen	schaut	0	0	0	0	0	0	2	0	0	0	0
Pres:3Sg	schauen	schaut an	0	0	0	0	0	0	1	0	0	0	0
Pres:3Sg	schauen	schaut aus	0	0	0	0	0	0	1	0	0	0	0
Inf	schauen	zuschauen	0	0	0	0	0	0	1	0	0	1	1

As for the weak–strong distinction in PP forms, Carola is highly pattern selective: in the complete corpus, we find 36/42 correct weak and 18/27 correct strong verb types, while we find 14/16 strong>weak (*umfallt* ← *umg(e)fallen* 'fallen'), only 1/1 weak>strong verbs (*geweinen* ← *g(e)weint* 'cried' at 2;10), and 4/4 incorrect strong verbs, mainly forms not considering the ablaut rules (*beißen:PP* ← *(ge)bissen* 'bit', *stehen:PP* ← *g(e)standen* 'stood').

The transition phase is characterized by an increase in the awareness of morphological forms and of syntactic patterns, thus forcing the restructuring of grammar. All children show an increasing awareness of paradigmatically different representations. While Bernd continues to largely avoid production, a qualitative change

to longer utterances, syntactic patterns, and partial realization of morphological forms can be observed. Katharina, Carola, and Lisa extend their mini-paradigms and show awareness of syntactic patterns.

2.5. Adopting modular organisation

Finally, according to our analysis (cf. Dressler and Karpf 1995; Kilani et al. this volume), the children enter modular morphological organisation. This allows great expansion in each of the two separate modules of morphology and syntax. Bernd, Carola and Katharina start using subordinated clauses. Case marking of Art (starting with Acc as Obl) emerges as well (earlier in Lisa), the latest in Bernd at 3;4/3;5⁸.

All children produce conversions, e.g. Bernd's *Ich tu besen* 'I do broom:Inf' (instead of *kehren* 'sweep', similar to (correct) *Ich tu duschen* 'I do shower:Inf' from *Dusche* 'shower'); Carola is especially productive in compounding. From 3;5 onwards, Bernd uses N+V:Agent compounds (e.g. neologistic *Badewanne-putz-er* 'bath-tub clean-er'). Tokens of compounding and derivation appear too rarely to be caught on the tape-recorder in greater number, and thus there is no positive evidence for an assumption of dissociated submodules of compounding vs. derivational vs. inflectional morphology.

Pl forms are now mostly correct in Bernd (3;4–3;9), i.e., unproductive Pl forms are adopted, overgeneralisations are not observed in the spontaneous data. He produces 5/7 *-n*, 13/23 *-e* and 2/7 *-er* Pl forms. at 3;4 oblique case marking in the SG and at 3;8 oblique case marking in the Pl is observed (*den Kinder-n* 'to the kids'). Interestingly, *-s* Pl is avoided again until 3;11 (*viele Auto-0* 'many car')⁹.

In tests performed with Bernd at 3;11, we find a clear tendency towards *-e* and *-n* plural overgeneralisation, in phonologically more problematic cases also towards avoidance (or zero affixation, e.g. **Straßenbahn(-n)* 'trams'). While *s*-Pl was not assigned correctly, it appeared with one zero-class noun:

⁸ Not counting earlier approaches during the protomorphological stage, where Dat was used as a possessive marker (*dem Papa* 'belongs to daddy', and *mir* '(belongs) to me').

⁹ Which would be correct in the Styrian dialect to which Bernd is sometimes exposed when visiting his grandparents; in this special case, however, it is improbable that Bernd adopted this feature from dialectal influence, as such influences usually do not persist for a long time.

Table 12. Bernd's Pl formation during two tests at 3;11; errors: The leftmost column indicates the correct category, while the examples show erroneous realisations.

correct:	Test #1	correct	Test #2	correct
n-Pl, f.	Badewanne-0 1, Autobahn-0 1, Ubahn 1, Waschmaschine 3, Straßenbahn: 1, Uhr-0 1		Gabel-0 1, Blume-0 1, Badewanne-0 1, Straßenbahn-e 1, Kugel-n 1, Ziege-n 1	
n-Pl, m./n.	Bett-e 1	10	Bett-e 1, Hase-0 1, Sessel-0 1, Ohr-0 1,	17
e-Pl, m., n.	Bus-0 1, Herd-0 1, Bahnhof-0 1, Regenschirm-0 1		Büs-se 2, Schaf-0 1, Nilpferd-0 1, Zwerg-en 1, Berg-en 1	
e-Pl, f.	Hand-e 1	12	Hand-0 1	23
s-Pl	Radio-0 1	3	Auto-0 1, Radio-0 1, Mama 1, Papa 1	3
er-Pl	Haus-0, Glas-e 1, Buch-0 1, Gesicht-e 1, Bild-e 1	2	Dach-0 1, Gesicht-0 1, Bild-0 1	1
0-Pl	Bagger-s 2	3	Bagger-s 1	7

To conclude, Bernd's Pl formation in a test situation¹⁰ is either performed by *-n* (18, 27) or *-e* affixation (17, 29) or with zero-affixation (6, 14, which partly seems to be an avoidance technique), whereas *-s* (3, 3) and *-er* (2, 1) appear more seldom. Errors always tend to *-n*, *-e*, *-s*, or zero affixation, but never to *-er*. This proves the claim that productive classes are preferred.

At 4;3, Bernd still has not yet acquired umlaut-only Pl such as *Vögel* 'birds' which is represented as zero affixation *Vogel* (but he adopted it during the testing).

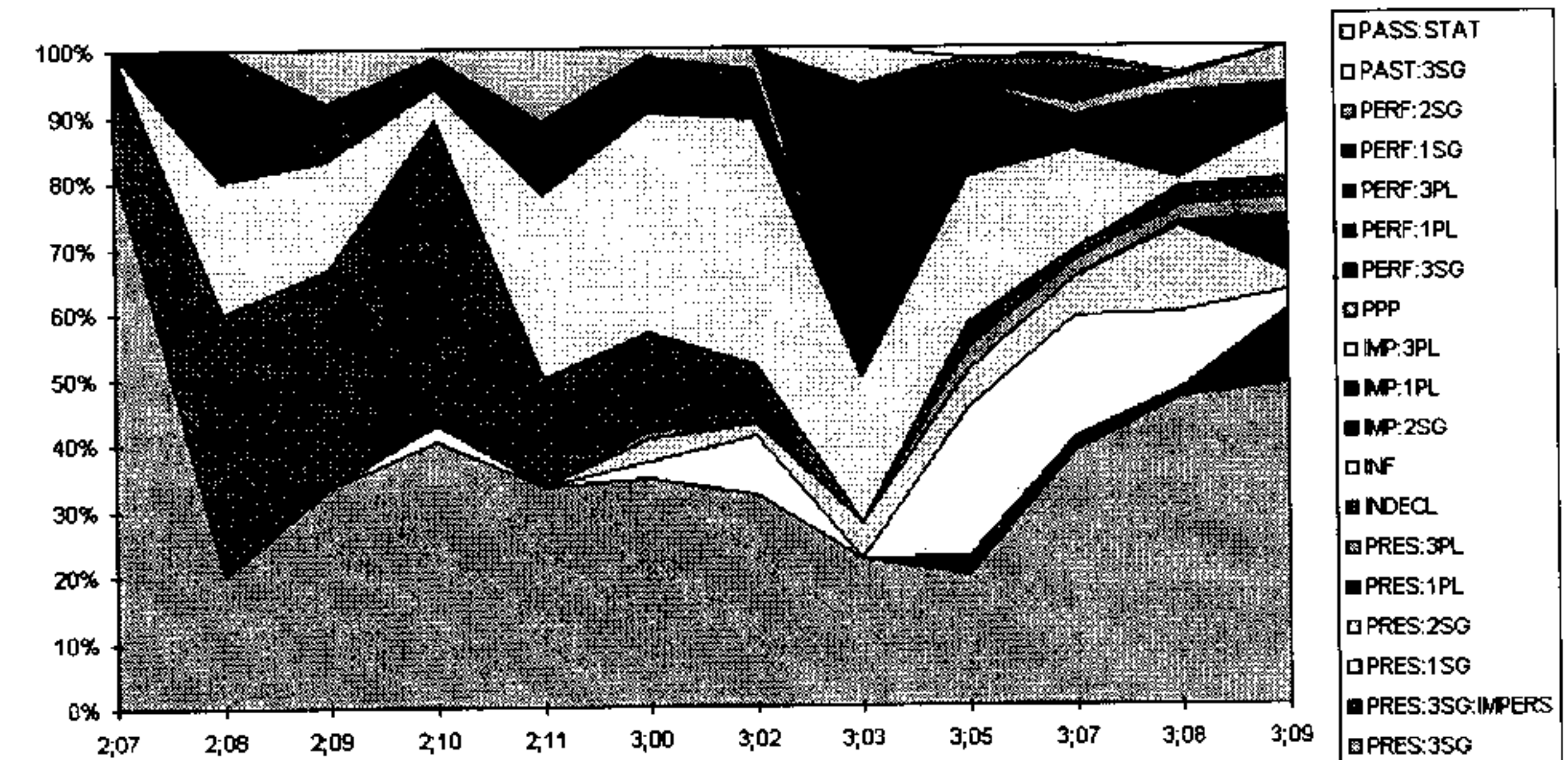
Carola (2;10-3;0), on the other hand, not only shows productive use of *-n*, *-e*, and *-s* Pl, but also overgeneralisations of the *-n* Pl, e.g. *Rad-n* ← *Räd-er* 'wheel-Pl', *Photo-s-n* ← *Photo-s* 'photo-Pl-Pl'. Katharina clearly prefers *-n* and *-e* Pl forms: 12/12 *-n* (e.g. *Katze-n* 'cats', 13/16 *-e* (e.g. *Hund-e* 'dogs'), but also adopts the Uml+e Pl: *Händ-e* 'hands', 1/1 *-s* (*Zopfzangi-s*), and 3/4 *-er* (*Kind-er* 'children'). Overgeneralisations always lead to *-e* attachment: **Eisenbahn-e* 'trains', **Eisenbahn-e*, **Elefant-e* 'elephants'.

As for verbs, Bernd shows a surprisingly fast advance in the acquisition of verb forms: at 3;3, he starts using Perf 3Sg, 1/3Pl, Modal+Inf, Pres:1/2/3Sg/1/3Pl, at 3;5 Pres:2Sg HON (← Pres:3Pl), e.g. *Möchten Sie?* 'Do you:HON want?', Perf:1/2Sg, and after very few trials at 3;4 (*Ich will nicht Haare *waschen *gewerden* ← *gewaschen werden* 'I don't want to be hair-washed'), at 3;6, he acquires Pass Stat 3Sg, e.g. *er ist gewaschen* 'He has been washed'. Verbs appear now in many different inflectional forms proving paradigmatic organisation (Pres: 1/2/3Sg/1/3Pl, etc.). Bernd's PP formation is ambivalent between weak and strong forms showing overgeneralisations in both directions (e.g. *sw ge-schrei-t* ← *ge-schrie-n* 'shouted', *ws gebohren* ← *gebohrt* 'drilled'), with uncertainty in ablaut

¹⁰ Compared to spontaneous Pl formations, there are many more errors in the tests. Attention and concentration play a key role; that's why the quoted tests have been restricted to a few minutes each.

use (*ge-schneid-en* ← *ge-schnitt-en* 'cut', *ge-feng-en* ← *ge-fang-en* 'caught'); from about 3;7 onwards, overgeneralisation of weak forms predominate (*gebracht* ← *gebracht* (Inf *bringen*) 'brought') and persist for a long time (4;3 *gewascht* ← *gewaschen* 'washed'). Imp/Pres:2/3Sg forms with umlaut are represented without umlaut until 3;7 (*helf mir* ← *helf mir* 'help me', *geb mir* ← *gib mir* 'give me')¹¹.

Figure 3. Bernd's explosive development of verbal categories at the onset of modular organisation (3;3), in % of all verb forms.



Carola (2;10-3;0) also extends her morphological categories for verbs: Pres 2Sg/1/3Pl, Perf:1/3Sg/1/3Pl, and Pass Stat 3Sg are acquired, quite similarly to Bernd. Katharina (2;10-3;0) who has acquired more categories earlier, now completes the Pres paradigm with 2Sg; many analogical "weak" forms for PP can still be observed (*gewascht* ← *gewaschen* 'washed').

To conclude, in the modular morphological stage, acquisition moves clearly towards the target grammar, i.e. is based on the given structures. All children extend acquired forms paradigmatically and show evidence for rule application. Of course, this also means that many errors are observed, but these "analogical" forms always turn members of unproductive paradigm classes (e.g. strong verbs, *-er* Pl) into members of productive classes (e.g. weak verbs, *-e/-en* Pl). A few shifts from weak (*-t*) to strong (*-en*) and "wrong" strong PPs are observed as well, but mostly without adopting (one of) the (complicated, non-transparent) ablaut rules (e.g. *ge-schneid-en* ← *ge-schnitt-en* 'cut:PP'). As they do not meet productivity criteria of any kind (cf. Dressler 1997), this phenomenon can only be attributed to the semantic salience

¹¹ Which is correct in SAG forms such as *gfallt's dir?* ← *gefällt's dir?* 'do you like it?', but not in these cases.

and high frequency of many strong verbs. Interestingly, shifts from weak to strong do occur only in the early stages and not later (e.g. in Bernd only before 3;8), and there are many more shifts that avoid the additional ablaut rules or exceptions (*ge-bringen* ← *gebracht* 'brought'). Thus, even these examples support the assumption of paradigm organisation insofar as they simplify the strong verb formation patterns to the more transparent *ge+V+en* pattern. According to Dressler (1997), there seems to be a gradual concept of what is productive, thus making *ge+V+en* more productive than e.g. *ge+V:Abl+en*.

3. Conclusion

Contrary to the inter-language comparison in Kilani et al. (this volume), the present paper focusses on individual differences in acquisition (of German). Having at least two quite different approaches, a prosodic one in Bernd and Katharina, a segmental one in Carola, whereas Lisa adopts a mixed one, we find striking similarities in the acquisition paths. In the beginning of language acquisition, deixis, naming and action-object uniting operations (e.g. Onomat) mark the onset of language use. The premorphological phase seems to be rather long (exception Lisa). The protomorphological stage is marked by the non-paradigmatic acquisition of morphological categories, still mainly following semantic and functional needs (Imp of 'look', 3Sg of 'cry', PP of 'go'), whereas with the onset of modular organisation, the morphological system is acquired paradigmatically following the productive rules of the target grammar.

Pre-, proto-, and modular morphology cannot simply be distinguished by the acquisition of morphological items, but by the acquisition strategy the child is using. It can clearly be seen that the four children investigated here do not necessarily acquire a certain category at a certain stage (although there are many more correlations than in an inter-language comparison, cf. Kilani-Schoch et al. this volume). Rather, they have in common a similar concept of grammar at the respective stages, often matching with language-specific categories (e.g. Inf/Imp 2Sg/Pres 3Sg during protomorphology, Modal+Inf at the end of protomorphology, AUX+PP at the onset of modular organisation). When evaluating child-specific strategies, e.g. the extension of (bisyllabic) fillers to Pron Pers + Modal positions by Bernd, it can (functionally) be matched to the acquisition of Modal + Inf at the end of protomorphology in the other children.

Productivity (cf. Dressler 1997) appears to play a key role in the acquisition of morphological categories; while protomorphology, where paradigms are not yet developed, shows still many non-productive forms (strong PP), the use and over-generalisation of productive rules occur much more often at the onset of modular morphology. Imp, Inf, and Pres 3Sg as well as productive Pl formation rules are acquired during protomorphology, the verbal Pres paradigm and less productive Pl rules occur in early modular morphology, and case marking still later. Thus, according to the language-specific transparency of the morphological categories, they are acquired earlier or later. Opaque, unproductive rules such as strong verb PP formation thus must be rote-learned first, while Pl seems to be identified early with the most productive microclass suffix(es) *-n* and *-e*.

Therefore it is necessary to investigate the acquisition strategies and the way pattern selection is performed rather than to look for certain morphological categories. As is assumed in Dressler and Karpf's (1995) model of self-organisation, the subsequent linguistic strategies are based on each other and depend on the parameters of self-organisation, of morphological naturalness, and of language-specificity. Although acquisition strategies and acquisition velocity may be different, all children clearly seem to develop quite similar stages of morphological awareness in the respective phases of development.

ABBREVIATIONS

Abl	ablaut
AD	Austrian dialect(s)
Acc	accusative
Art	article
Art Def	definite article
Art Indef	indefinite article
Comp	compounding
Cop	copula
Dat	dative
Deriv	derivation
Dim	diminutive
Indecl	undeclined (non-inflected/ing) form
Inf	infinitive
Imp	imperative
Obl	oblique case
Onomat	onomatopoeics
Pass Evt	event passive
Pass Stat	stative passive
Perf	perfect
Pl	plural
PP	past participle
Past	past tense (preterite)
Pres	present
Pron Pers	personal pronoun
Redup	reduplication
SAG	standard Austrian German
SG	standard German
Sg	singular
Uml	umlaut

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