Ineta Savickienė, Sabine Klampfer, Katharina Korecky-Kröll
& Wolfgang U. Dressler

8. NOUNS AT THE TRANSITION FROM PRE- TO PROTOMORPHOLOGY: A COMPARISON OF LITHUANIAN AND GERMAN

0. Introduction

This chapter is intended to link this book more firmly to the international "Crosslinguistic Project on Pre- and Protomorphology in Language Acquisition", whose main aim is comparison of morphology acquisition in typologically similar and diverse languages. Throughout the previous chapters Lithuanian developments have been characterised with reference to publications on developments in other languages. This represents the application of Mathesius' (1928) characterising typology to the study of child language.

Here we intend to be more typological, but for lack of space we will compare just one language, German, i.e., engage in contrastive typology of two cognate, but typologically rather different languages. Our analysis will focus on the child's onset of morphological development, i.e., on the transition from pre- to protomorphology (Dressler & Karpf 1995, Dressler 1997, Bittner, Dressler & Kilani-Schoch 2000, in print), because this is the most crucial period for the acquisition of morphology and thus also for our project. Special attention will be paid to how children start to detect morphological patterns and begin to use them creatively. In this phase, first form oppositions and first analogies appear.

We will first analyse the children's lexical production of nouns vs. all words. Here we will also use a new tool not yet applied in investigations on the acquisition of morphology (except in Klampfer 2001, Dressler, Kilani-Schoch & Klampfer in print, Klampfer & Korecky-Kröll in print). This is the new measure of lexical diversity (measure D, Richards & Malvern 1999). D is comparable to type/token ratio (TTR), but is independent of sample size, i.e., in contrast to TTR it does not give lower values for samples with a higher number of word tokens and vice versa. D is calculated by fitting empirical data to the theoretical curve of TTR plotted against token size. Then, we will illustrate the children's

developmental steps in noun morphology observed at the transition from pre- to protomorphology. The focus will be on developmental changes in synthetic morphology, and especially on noun plural, case, diminutive and compound formation in nouns, and first analogies with nouns. Furthermore, we will relate some results to corresponding frequency counts of the children's input.

But before, a brief comparison of the two target morphologies is needed, where we will limit discussion to those areas which are pertinent for the early stages of acquisition of colloquial urban Lithuanian and Austrian German.

1. A short contrastive sketch of Lithuanian and German noun morphology

From a diachronic perspective Lithuanian noun morphology is more conservative, i.e., closer to the common Indo-European origins, than German noun morphology. Therefore, synchronically, Lithuanian declension is richer and more complex than German declension. Thus, in addition to the two numbers of both languages (Sg., Pl.), Lithuanian distinguishes seven cases (all of them productive, see ch. 4), German only four, and in Austrian German, case distinction is less productive than in Northern German varieties (e.g., the genitive is often replaced by prepositional phrases governed by *von* 'of'). In contrast to Lithuanian, which has no articles, German is an article language, whereby articles are the main markers of case distinction, and even here there are many more homophonies (incl. syncretisms) than in Lithuanian declension.

German is only richer in genders, because the German neuter has no correspondent in Lithuanian (just masculine and feminine). But gender distinction is neutralised in German plurals. Gender distinctions are constitutive for plural formation and inflection-class distinctions. Both languages have two macroclasses, in Lithuanian one for masculines and one for feminines (see ch. 5), whereas German neuters and masculines belong to the same macroclass. In contrast to Lithuanian, where also the choice of case allomorphs is constitutive for class distinction, German case allomorphs are only constitutive for the distinction of strong and weak masculine singulars. The productive German plural suffixes are *-e* (with and without umlaut) for masculines and neuters, *-(e)n* for feminines and animate masculines, *-s* for all genders (used as an exceptional default) and zero for masculines and neuters that end in shva plus sonorant. The *-er* suffix and suffixless umlaut plurals are always unproductive.

Case and number distinctions marked on the noun are minimally two and maximally four in German, e.g.: Sg. *die/der/der/die Frau* 'the woman', Pl. *die, der, den, die Frauen* vs. *der Mann, des Manns, dem/den Mann* 'the man', Pl. *die/der Männer, den Männern, die Männer*. In Lithuanian, there is a maximum of 13 distinctions (all cases are distinctively marked, except in the syncretism of nominative and vocative plural) and a minimum of nine distinctions in colloquial Lithuanian in the inflection class of *kója* 'leg', where the following additional homophonies occur: Nom./Voc./Instr. Sg. *kója*, Gen.Sg. = Nom./Voc. Pl. *kójos*, Dat/Instr.Pl. *kójom*.

The only derivational suffixation that is relevant for pre- and protomorphology is diminutive formation. Diminutives are much more frequent in types and tokens in Lithuanian than in Austrian German. There are six diminutive suffixes for each gender which occur in the Lithuanian input (see ch. 2), but there are only the suffixes *-i, -erl, -chen, -(i)lein, -(i)li, -l* in the input of the Austrian child investigated here. Inflection of diminutives is simpler than in the average of declension classes in both languages, thus the German diminutives have only *-s, -(e)n* and zero plurals.

In contrast, nominal compound formation is much more frequent in types and tokens in German than in Lithuanian.

2. Data

This study is based on longitudinal spontaneous speech data of the Lithuanian girl Rūta (see ch. 1) and the Austrian boy Jan from the beginning of recordings until early protomorphology. Such as the Lithuanian girl, the Austrian child was audio-recorded at home, in interaction with his mother. Recording situations vary between free play, everyday situations (e.g., eating, washing) and picture book sessions. The data were transcribed and morphologically coded according to the norms of CHILDES (MacWhinney 2000).[25] For quantitative analyses of the data, the CLAN programs of CHILDES were used. A detailed overview of the child's corpus, including the child's age, the duration of the session in minutes, the number of the child's productions (i.e., all verbal emissions

[25] Data were collected and transcribed by Katharina Korecky-Kröll (and double-checked by Sabine Klampfer). Sabine Klampfer was responsible for the automatic morphological coding of the data (using CLAN's MOR utility) and for the creation of the full-form lexicon GER.LEX which was used for this purpose.

of the child), and the number of analysed utterances[26], is given in the annex.

Both children, Jan and Rūta are early talkers – their onset of protomorphology has been dated at 1;8. In terms of Peters and Menn (1993: 745), their approach to language can be characterised as "word-oriented", i.e., they initially focus on single words rather than on multisyllable chunks of speech. Imitative learning plays an important role in Jan's as well as in Rūta's early acquisition phase (cf. Tomasello 2000).

3. Production of nouns

Jan's production of nouns is relatively high from the beginning of recordings, as shown in Figure 1. From 1;4 onwards, the child's percentage of nouns (types and tokens) with respect to the total number of word types and tokens even exceeds the mother's level.[27] The Lithuanian and Austrian data show similar results concerning the children's use of nouns (types and tokens), i.e., both children's noun productions exceed their mothers'.

As can be seen in Figure 2, at the beginning, Rūta's production of nouns is not as high as Jan's: the girl uses nouns more than twice less than Jan. But then, Rūta's percentage of nouns with respect to the number of all words starts to increase, and from 1;9 onwards, the children's noun production is at about the same level: 30%-40% both in types and in tokens. Also the Lithuanian and Austrian input is rather similar, especially with respect to types (both about 30%). But the number of tokens differs, i.e., about 13% in the Austrian and 21% in the Lithuanian data. This might be due to the higher amount of function word tokens in German as opposed to Lithuanian – but further research is necessary.

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[26] To qualify as an utterance, a production had to include at least one meaningful unit resembling a German word in form and meaning. Babbling, vocalisations and completely incomprehensible strings were not considered utterances. Citations (e.g., nursery rhymes and songs) and direct imitations were excluded from the analysis.

[27] For input frequency we have analysed all child-directed utterances of: 1) Jan's mother in Jan's corpus from 1;3–2;0, yielding the total sum of 2603 word types and 72581 word tokens, 2) Rūta's mother in Rūta's corpus from 1;7–2;0, yielding the total amount of 4030 word types and 34721 word tokens.

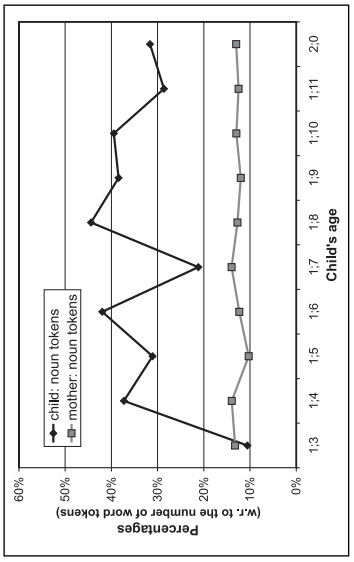

Fig. 1: German: Production of nouns (types and tokens)

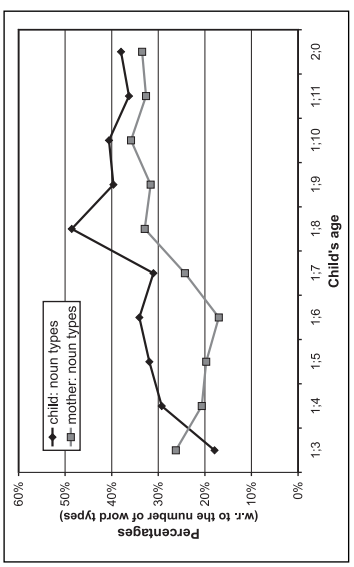

Fig. 2: Lithuanian: Production of nouns (types and tokens)

The corresponding absolute numbers of Jan's and Rūta's noun types and tokens and the respective type/token ratio per month of age are given in Table 1 and Table 2.

Furthermore, lexical diversity (value D) in nouns was calculated for both children. As one can see, with both children, the onset of protomorphology (1;8) goes together with a steep increase of value D in nouns. Throughout the whole period of investigation, value D in nouns is higher in the Austrian child than in the Lithuanian child. It remains an open question for further research what might be the reason for this difference.

Table 1: Jan: Number of noun types and tokens, type/token ratio, value D (optimum average)[28]

Age	Types	Tokens	TTR	D (optimum average)
1;3	7	20	0,350	3,94
1;4	12	50	0,240	
1;5	15	42	0,357	4,63
1;6	15	76	0,197	
1;7	18	36	0,500	33,03
1;8	122	610	0,200	
1;9	126	573	0,220	54,81
1;10	132	544	0,243	
1;11	150	683	0,220	79,19
2;0	228	1150	0,198	

Table 2: Rūta: Number of noun types and tokens, type/token ratio, value D (optimum average)[29]

Age	Types	Tokens	TTR	D (optimum average)
1;7	13	50	0,26	2,32
1;8	56	339	0,165	16,65
1;9	145	994	0,146	29,94
1;10	191	1159	0,165	37,17
1;11	135	862	0,157	35,82
2;0	176	993	0,177	49,01

[28] For the analysis of Austrian German, data had to be grouped into age periods of two months, because in the early recordings, too few noun tokens were available for the computation of D per month of age.

[29] Note that for this analysis, non-adult like words, occurring in a noun context which have been coded as belonging to the word class of nouns have been

4. Noun morphology

4.1. Plural

In contrast to Lithuanian (see ch. 3), there are no gender distinctions in German plurals. German noun plurals are formed by four different suffixes *(-s, -(e)n, -e, -er*), by zero-marking, by umlaut (base vowel change) or by a combination of umlaut and suffixes *-e, -er*. Regularities in the application of plural markers are based on gender and/or on the phonological shape of the word endings (right word edge).

With Jan, the beginning of protomorphology coincides with the emergence of first oppositions between singular and plural forms (see Table 3).[30]

Table 3: Jan: Oppositions between singulars and plurals

Child's age	Jan		
	Oppositions singular - plural	Noun types	Oppositions singular - plural/ noun types
1;8	3	122	2%
1;9	4	126	3%
1;10	4	132	3%
1;11	4	150	3%
2;0	14	228	6%

Table 4: Rūta: Oppositions between singulars and plurals

Child's age	Rūta		
	Oppositions singular - plural	Noun types	Oppositions singular - plural/ noun types
1;7	0	13	0%
1;8	0	56	0%
1;9	14	145	10%
1;10	13	191	7%
1;11	10	135	7%
2;0	16	176	9%

excluded, because a corresponding word class has not been differentiated in the Austrian data.

[30] For the calculation of oppositions, direct imitations have been excluded for both languages investigated.

In premorphology, no spontaneously produced oppositions between singular and plural forms occur in Jan's and in Rūta's data. With Jan, the only examples of singular/plural oppositions in premorphology consist of imitated plural forms, e.g., 1;5 *Fisch – Fisch-e* 'fish', *Ohr – Ohr-en* 'ears'. Rūta's only imitated opposition, produced at 1;8, is *ganenėl-ė – ganenėl-ės* (*grandinėlės*) 'chain'. Spontaneously produced plural forms in premorphology show no singular counterpart and are limited to plural-dominant nouns, e.g., *Keks-e* 'cookies', *Zähn-e* 'teeth', *Schuh-e* 'shoes' (Jan); *pauk-ai* (*plaukai*) 'hair', *bat-ai* 'shoes' (Rūta).

At the onset of protomorphology (1;8), the first clear singular/plural oppositions appear in Jan's data: *Auto – Auto-s* 'cars', *U-Bahn – U-Bahn-en* 'underground railways', *Pferd – Pferd-e* 'horses'. Two months later, the first analogical formations are attested, which prove that the child has started to creatively use plural morphology: *Jeep – *Jeep-en* (<-- *Jeep-s* 'jeeps') and *Zug – *Zug-en* (<-- *Züg-e* 'trains'). In these examples the *-(e)n* plural is overgeneralised. At the age of 2;0, two examples of over-generalisations of the suffix *-e* occur: *Station – *Station-e* (<-- *Station-en* 'stops, stations') and *Hut – *Hut-e* (<-- *Hüt-e* 'hats'). The suffixes *-(e)n* and *-e* are the most frequent plural suffixes in German, both in type and in token frequency (Goebel & Indefrey 2000: 180). Overgeneralisation of *-(e)n* and *-e* was also observed in the protomorphological phases of four other Austrian children (Vollmann et al. 1997: 69).

Rūta's first (generally) spontaneously produced singular/plural oppositions appear at 1;9 (Table 4). Their number is stable throughout the period of 1;9-2;0. Some examples at 1;9 are: *balion-as – balion-ai* 'balloons', *banan-as – banan-ai* 'bananas', *gėlyt-ė – gėlyt-ės* 'flower:DIM', *lėlyt-ė – lėlyt-ės* 'dols:DIM' (more in ch. 3). As with Jan, the first analogical formations were observed two months after the first oppositions: *mašin-us* (mašin-as) 'cars:FEM:PL:ACC', *nuokat-ai* (nuotrauk-os) 'pictures:FEM:PL:NOM' (1;11). Rūta overgeneralises the masculine plural endings *-ai* (Nom.) and *-us* (Acc.) due to the fact that this masculine microclass is the most productive one in her speech (see ch. 5). The other two examples demonstrate substitution of one feminine microclass by another (both are productive): *dėm-os* (*dėm-ės*) 'spots' 1;11, *tiut-ios* (*šiukšl-ės*) 'garbage'.

4.2. Case

German case is predominantly expressed by determiners and adjectives which were not examined in the present study. Overt case marking in German nouns is reduced to the genitive suffix *-s*, mostly used in pos-

sessive phrases (e.g., *Jan-s Auto* 'Jan's car') and the suffix *-(e)n* in the genitive/dative/accusative of weak masculine singular nouns (e.g., Nom. *der Hase* – Gen./Dat./Acc. *des/dem/den Has-en* 'rabbit') or in the dative plural (e.g., Nom. Pl. *die Händ-e* – Dat. Pl. *den Händ-en* 'hands'). Consequently, case oppositions with nouns are very rare in Jan's data (also in the input) as can be seen in Table 5. In the whole period investigated for this paper, there are only 6 clear case oppositions in Jan's data – all consisting of the non-marked form and genitive *-s* in possessive phrases with proper and address nouns, e.g., *Papa – Papa-s Kakao* 'daddy's cocoa'.

Table 5: Jan: Case oppositions

Child's age	Jan		
	Case oppositions	Noun types	Case oppositions/ noun types
1;8	0	122	0%
1;9	0	126	0%
1;10	1	132	1%
1;11	2	150	1%
2;0	3	228	1%

Table 6: Rūta: Case oppositions

Child's age	Rūta		
	Case oppositions	Noun types	Case oppositions/ noun types
1;8	12	56	21%
1;9	50	145	34%
1;10	51	191	27%
1;11	41	135	30%
2;0	64	176	36%

Table 6 shows that the first oppositions in Rūta's speech appear at 1;8, most in nominative, accusative or genitive singular: *banan-as* (Nom.) – *banan-ą* (Acc.) 'banana', *bit-ė* (Nom.) – *bit-ę* (Acc.) 'bee', *močiut-ė* (Nom.) – *močiut-ės* (Gen.) 'grandmother'. In contrast, the oppositions observed at 1;9 occur in nominative, accusative, genitive, vocative, dative in singular and plural: *banan-as* (Nom.) – *banan-ą* (Acc.) – *banan-o* (Gen.) – *banan-ų* (Pl. Gen.) 'banana', *obuoliuk-as* (Nom.) – *obuoliuk-ą* (Acc.) – *obuoliuk-ai* (Pl. Nom.) – *obuoliuk-ų* (Pl. Gen.) 'apple:DIM', *arbatyt-ė* (Nom.) – *arbatyt-ę* (Acc.) – *arbatyt-ės* (Gen.)

'tea:DIM', *ses-ė* (Nom.) – *ses-ę* (Acc.) – *ses-ės* (Gen.) – *ses-ei* (Dat.) – *ses-e* (Voc.). A high number of case oppositions occurs with proper nouns, especially with *Rūtytė*, and with address nouns: *mamytė* 'mother: DIM', *močiutė* 'grandmother' (Nom., Acc., Gen., Dat., Voc.). Thus Rūta's case oppositions increase considerably already in the first months of protomorphology.

The observed difference between the two children in the acquisition of case oppositions is clearly due to differences in the target languages.

4.3. Diminutives

As with other Austrian children (cf. Vollmann 1997), diminutives are rare in Jan's data (Table 7). From 1;9 onwards, Jan produces simplex-diminutive oppositions (hypocoristics included) such as *Bauch – Bauch-i* 'belly', *Hand – Hand-i* 'hand', *Mama – Mam-i* 'mum'.

Rūta starts with two oppositions at 1;8 (Table 8), e.g., *T-ytė – T-elė* (*Rūt-ytė, Rūt-elė*), *bat-ai – bat-iuka* (*bat-ukai*) 'shoes', at 1;9, the number of form oppositions increases, e.g., *katė – kat-ytė – kat-utė* 'cat', *galva – galv-ytė* 'head', *koja – koj-ytė* 'leg', *arbata – arbat-ytė* 'tea', *duona – duon-ytė* 'bread', *kėdė – kėd-utė* 'chair', *Aura – Aur-utė, Milda – Mild-utė, Paulius – Paul-iukas, Rūta – Rūt-ytė, Rūt-elė, Mama – Mam-ytė* 'mother'. As mentioned earlier (cf. 2.3.1), Rūta uses a high number of diminutive types and tokens, but the number of diminutives used in both forms, i.e., simplex and diminutive of the same noun type, is rather low.

Table 7: Jan: Oppositions between simplex nouns and diminutives

Child's age	Jan		
	Oppositions simplex - diminutive	Noun types	Oppositions simplex - diminutive/ noun types
1;8	0	122	0%
1;9	2	126	2%
1;10	1	132	1%
1;11	1	150	1%
2;0	4	228	2%

Table 8: Rūta: Oppositions between simplex nouns and diminutives

Child's age	Rūta		
	Oppositions simplex - diminutive	Noun types	Oppositions simplex - diminutive/ noun types
1;8	2	56	4%
1;9	15	145	10%
1;10	21	191	11%
1;11	9	135	7%
2;0	21	176	12%

Rūta's diminutive production is more frequent than Jan's which is due to the greater richness of the Lithuanian diminutive system. In fact, it seems that neither German case forms nor German diminutives reach a critical mass in Jan's input in order for him to use these rarer forms productively. The same can be stated for compounds for the Lithuanian girl.

4.4. Compounds

In noun compound formation, Jan's onset of protomorphology (1;8) is characterised by the emergence of first oppositions between compounds and their simplex members. As can be seen in Table 9, compounding is a very important morphological process in Jan's early speech. With the beginning of protomorphology, Jan's simplex-compound oppositions make up 7% of all noun types per month and show a considerable increase already in the first months of protomorphology. Compounds also occur frequently in Jan's input.

Table 9: Jan: Oppositions between simplex and compound nouns[31]

Child's age	Jan		
	Oppositions simplex - compound	Noun types	Oppositions simplex - compound/ noun types
1;8	8	122	7%
1;9	13	126	10%
1;10	23	132	17%
1;11	20	150	13%
2;0	41	228	18%

[31] For this analysis noun-noun compounds (e.g., *Müll+auto* 'garbage car'), verb-noun compounds (e.g., *Geh+schule* lit. 'walking school', i.e., 'playpen'), adjective- or adverb-noun compounds (e.g., *Blau+licht* 'blue light') and preposition-

During premorphology, no oppositions between simplex and compound nouns are observed in Jan's data. Jan's production of compounds starts at 1;5 with imitated amalgam-like compounds which do not prove that the child has identified the simplex parts of the respective compound, e.g., *Vohnchta* (<-- *Wohn+zimmer* 'living room'), *Baunsne* (<-- *Bau+steine* 'building bricks'). From 1;7 onwards, Jan's first spontaneously produced, but still amalgam-like, compounds emerge, e.g., *Aubus* (<-- *Auto+bus* 'bus'), *Fahda* or *Fahra* (<-- *Fahr+rad* 'bicycle'). At the onset of protomorphology (1;8) the first simplex-compound oppositions appear, but most compounds have the same head. At 1;8, 5 out of 8 compounds occurring in oppositions are compounds with the head *Auto* 'car', e.g., *Müll+auto* 'garbage truck', *Last+auto* lit. 'load car', i.e., 'truck', *Renn+auto* 'racing car'. In this period, examples of amalgam-like compounds can still be found in Jan's data: e.g., *Bamme* (<-- *Bade+wanne* 'bath tub'). From 1;9 onwards, compounding shows a considerable increase, which starts to level out at 1;10.

In the same month, a first example of analogy appears: **Laster+wagen* (<-- *Laster* or *Last+wagen* 'truck'), evidence for the child's creative use of compound formation. Neologisms appear, e.g., *Rad+auto* ('wheel car' – a car that has wheels, i.e., any car), *Porsche+auto* ('Porsche car' <-- *Porsche*), *Mist+tonne* (<-- *Müll+tonne* or *Mist+kübel* 'garbage bin'). The neologism *Feuer+mann* 'fire man' alternates with the unreduced form *Feuer+wehr+mann* 'fire brigade man'.

In contrast to German, Lithuanian does not have many compounds, both in types and tokens, although noun compound formation is productive. Thus Rūta and her mother use compounds very rarely. The whole inventory of compounds produced by the girl is: *kupranugaris* 'camel' (2;2), *laikrodis* 'clock, watch' (from 2;1), *dviratis* 'bike' (from 2;0), *veidrodis* 'mirror' (from 2;0), *rankšluostis* 'towel' (2;3).

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noun compounds (e.g., *Unter+hose* 'underpants') were taken if at least one of their counterparts (i.e., the same noun, verb, adjective, adverb or preposition) was produced in the same month of age. Compounds derived from verbs were also included if the verb was produced in the same month of age (e.g., *Staub+sauger* lit. 'dust sucker', i.e., 'vacuum cleaner' from *saugen* 'to suck, to vacuum'). Imitated compounds have been excluded from countings.

5. Conclusion

In this study, we compared noun development in the speech data of one Lithuanian and one Austrian child. The analysis focussed on the children's onset of morphological development. The transition from pre- to protomorphology took place in both children at about the same time (1;8). On the one hand we would have expected that a child which acquires a morphology-richer language (i.e., Lithuanian) detects morphology earlier than a child which acquires a morphology-poorer language (i.e., German). On the other hand Jan is a very early talker in comparison with the other Austrian children investigated so far. Thus further investigations are needed.

During the period from 1;8 to 2;1, both children produce a similar percentage of nouns (above 30%), a higher percentage than their mothers in child-directed speech. The onset of protomorphology is characterised in both children by a steep rise of lexical diversity in nouns (measure D) and by the emergence of form oppositions in noun inflection (although the Lithuanian system is much richer). These results further corroborate the hypothesis that there exists a close relationship between lexical and morphological development ("critical mass hypothesis", cf. Marchman & Bates 1994).

In both children the first analogies, attesting creative use of morphology (cf. Allen 1996) occur two months after the first form oppositions. This supports the hypothesis that a critical mass of form oppositions is needed for turning to the most creative use of morphology (cf. Dressler, Bittner & Kilani-Schoch 2000: 166f).

During premorphology both children produce spontaneously only isolated plurals of plural-dominant nouns, oppositions being limited to imitated forms. At the onset of protomorphology, first oppositions between singular and plural forms emerge.

Similar phenomena are just found in the other rich parts of inflection and in the most productive part of nominal word formation of each of the two languages. Thus case oppositions emerge in Lithuanian, but not in Austrian German, simultaneously with number oppositions. Thus we find a difference in acquisition which can be derived from differences in the target systems. Analogously, there is a correlation with higher richness and productivity of diminutive formation in Lithuanian and of nominal compound formation in German with the respective acquisition data from both children: diminutive-simplex oppositions emerged at the same time as the inflectional form oppositions in Rūta's data, whereas

they emerged one month later and are very infrequent in Jan's data. In contrast, in Jan's data, cooccurrences of compounds and at least one member of the respective compound emerged simultaneously with the other morphological form oppositions at the onset of protomorphology, whereas Rūta even started to produce her first and very rare compounds only two months later and her only opposition eight months later.

All in all, our comparative analyses give strong evidence for the relevance of the concept of protomorphology as the stage where children detect morphology, and for the dependence of morphology detection on the richness of morphology in the input language.

Annex: Jan's longitudinal corpus: characteristics of analysed sessions from 1;3 to 2;0

Session	Age	Duration	Productions	Analysed utterances
jan01	1;03.30	45 min.	302	182
jan02	1;04.27	30 min.	231	132
jan03	1;05.24	30 min.	193	120
jan04	1;06.10	30 min.	234	165
jan05	1;07.03	30 min.	210	158
jan06	1;08.03	60 min.	435	335
jan07	1;08.12	60 min.	392	295
jan08	1;08.19	60 min.	348	259
jan09	1;08.26	60 min.	390	288
jan10	1;09.08	60 min.	424	306
jan11	1;09.15	60 min.	453	333
jan12	1;09.23	60 min.	426	294
jan13	1;09.30	60 min.	437	337
jan14	1;10.06	60 min.	640	501
jan15	1;10.13	60 min.	456	353
jan16	1;10.26	60 min.	180	144
jan17	1;11.02	60 min.	414	380
jan18	1;11.08	60 min	230	168
jan19	1;11.16	60 min.	392	336
jan20	1;11.24	60 min.	474	422
jan21	2;00.00	60 min.	524	452
jan22	2;00.11	60 min.	602	523
jan23	2;00.21	60 min.	502	424
jan24	2;00.29	60 min.	467	369