ON THE ACQUISITION OF ADJECTIVE
GRADATION IN LITHUANIAN AND GERMAN

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INTRODUCTION

There is quite an extensive body of research on children’s acquisition of adjective gradation in English. Most studies have investigated synthetic vs. analytic comparative and superlative formation (Layton and Stick 1979; Graziano-King and Smith Cairns 2003; Marshall and van der Lely 2007). However, acquisition of degrees of comparison in other languages has not been sufficiently analyzed yet. This study is an attempt to fill in the gap and to provide a contrastive analysis of two languages in which acquisition of adjective gradation has only been partially examined (this relates to German; see Schaner-Wolles and Dressler 1985; Schaner-Wolles 1988) or has not been investigated at all (Lithuanian)1.

This cross-linguistic investigation of two typologically different languages gives us an opportunity not only to define the main problems of acquiring comparative and superlative degrees of adjectives but also to detect the relation between language acquisition and the respective linguistic system. It also enables us to check the hypothesis that the system of morphologically richer languages is acquired quicker than the system of morphologically poorer languages (cf. Xanthos et al. 2010). Thus the aim of this enquiry is to examine abilities of Lithuanian and German children in forming comparative and superlative degrees of adjectives and to see which forms – those of the comparative or the superlative degree – are more easily acquired by children.

Previous studies on superlative and comparative comprehension and production in English have shown that the comparative suffix -er is acquired earlier than the superlative suffix -est for typically developing children (Layton and Stick 1979; Clarke 2001), and the same is true of children with language impairment (Clahsen

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1 This joint investigation presents some preliminary results of the Crosslinguistic Language Diagnosis Project (CLaD). The aim of the CLaD project is to improve the situation of language impaired individuals by developing a set of diagnostic techniques that will enable to carry out a fast and easy diagnosis of language impairment.
and Temple 2003). Layton and Stick (1979) suggest that later acquisition of the superlative suffix is due to limitations in cognitive and perceptual abilities. To use a superlative form, a child has to engage in a comparison of two or more dimensions, while formulation of a comparative form requires from a child just a one-dimensional comparison between two objects.

**COMPARATIVE AND SUPERLATIVE FORMATION IN LITHUANIAN AND GERMAN**

Comparative and superlative formation is traditionally understood as belonging to the realm of inflection but it does not belong to prototypical inflectional morphology (Dressler 1989).

Lithuanian comparatives and superlatives are formed synthetically by default, with the suffixes (masc. nom. sg.) -esnis, -iausias (ger-as + -esnis → geresnis ‘better’, ger-as + -iausias → geriausias ‘the best’). However, if the adjective base is derived via the suffixes -ėtas, -uotas, then they can be formed either synthetically or analytically (e.g. gėlėt-as + -esnis → gėlėt-esnis ‘more flowery’ (synthetic form) = daug-iau / lab-iau² gėlėtas ‘more flowery’ (analytic form); gėlėt-as + -iausias → gėlėč-iausias ‘the most flowery’ (synthetic form) = daug-iausiai / lab-iausiai³ gėlėtas ‘the most flowery’ (analytic form). Synthetic superlatives of dental-final stems apply morphonological palatalisation to the dental (e.g. gėlėč-iausias ‘most flowery’).

German comparatives and superlatives are formed only synthetically with the suffixes -er and -st, whereby unlauteable vowels may be unlauteed or not (e.g. in predicative or adverbial position lang ‘long’, flach ‘flat’ acquire the comparative forms läng-er, flach-er, and the superlatives in adverbial position are am läng-sten, flach-sten).

**METHODOLOGY AND DESIGN OF THE EXPERIMENT**

We report the data from a Sentence Completion Study of 30 Lithuanian children (the age range is 4;0-5;6) and 30 German-acquiring children (4;2-6;2) from Austria (14 children) and Germany (16 children); all of them are typically developing children.

For the picture-based comparative and superlative formation task⁴ 30 adjectives were selected which were controlled for the following variables in Lithuanian:

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⁴ A picture-based comparative and superlative formation task was created by W. U. Dressler and his colleagues. The tests were performed and the results were coded in Kaunas by Laura Kamandulytė, in Berlin by Anja Hubert, and in Linz by Bettina Fuerst. Further investigations, in addition to this group, were also carried out by Wolfgang U. Dressler and Uli Sauerland.
obligatory morphonological palatalisation of root-final dentals, variable syllabic length (bisyllables vs. trisyllables) and underived vs. derived adjectives.

In German 30 adjectives were controlled for opacifying German umlaut (as has been mentioned, umlautable vowels may be umlauted or not, e.g. lang ‘long’, a comparative form läng-er vs. flach ‘flat’, flach-er), the syllabic length (monosyllables vs. bisyllables) and underived vs. derived adjectives.

To elicit comparative and superlative forms, pictures were used. The experimenter would first introduce the positive form of the adjective to a child: “Look! This house is small.” Next, the picture of a smaller house was presented together with a verbal stimulus, such as “And what about this house? This house is even (Lith. dar, Ge. noch) … (smaller).” Finally, a picture of a much smaller house was presented together with the verbal stimulus “And now look at this house! This house is the … (smallest)” (the Lithuanian superlative intensifying particles pats (masc.) and pati (fem.) and the Ge. am were used; see Picture 1).

![Picture 1. An example of the experimental task](image)

RESULTS

The data analysis has shown that the number of correct formulations for both comparatives and superlatives increases with age. During the experiment, the 4;0-4;6 year-old Lithuanian children correctly produced 89% of all comparative forms and 86% of all superlative forms (see Diagram 1). The group of 4;6-5;0 year-old children made fewer errors: 93% of all comparative forms were used correctly and the respective percentage for the superlative forms was 92%. The Lithuanian children in the 5;0-5;6 year-old group correctly produced 96% of all comparative and 95% of all superlative forms found in the corpus. As regards the German-speaking 4 year-olds, these produced correctly 65% of all comparative forms; the percentage of correctly used superlatives is 58%. As for the group of 5 and 6-year-old children, they correctly used 85-87% of comparative and 70% of superlative forms (see Diagram 2).
The analysis of the results points to the fact that in both languages the children’s performance of comparatives was better than that of superlatives (German p<.005, Lithuanian p < 0.03; see Diagram 3). This difference is not very striking in Lithuanian (93 % of correct responses in comparatives and 86 % of correct responses in superlatives), but it is quite significant in German, where 82 % of correct responses were found in comparatives and 70 % of correct responses in the use of superlatives. Only few exceptions were observed: 4 German and 5 Lithuanian-acquiring children showed better results in forming the superlative than the comparative degree.

On the one hand, better performance of comparatives could be explained by the fact that the superlative form is morphosemantically and morphotactically more
marked and less frequent. This aspect is especially noticed in token frequency, much less so in lemma and type frequencies in child-directed speech. Layton and Stick’s hypothesis (1979) can provide another explanation; it posits that later acquisition of the superlative suffix is due to limitations in cognitive and perceptual abilities, which may be seen as one cause of morphosemantic markedness. Furthermore, the superlative suffix -st(e) in German is phonotactically more difficult than the comparative suffix -er (complex onset vs. simple coda).

Diagram 3. Percentage of correct responses of comparatives and superlatives: Lithuanian and German data

As can be seen from Diagram 3, Lithuanian children made fewer errors than German-speaking children in forming comparatives and, especially, superlatives. The statistics for correctly used Lithuanian comparative forms is 92% and for superlative forms – 87%; the German-speaking children used correctly 82% of all comparatives and 70% of all superlatives. Despite the fact that Lithuanian adjectives belong to three declension classes in their base form and that there is only one declension of German adjectives, we witness more errors in the production of German degree forms than is the case in Lithuanian. The results also show that Lithuanian children may reach a ceiling earlier than German-speaking children: the data demonstrate the 4;1 age for comparatives and 4;2 for superlatives, whereas in German the respective age is 5;4 for both comparatives and superlatives. Presumably, this can be explained by a greater richness of Lithuanian morphology in general, which stimulates the acquisition of noun and adjective morphology (cf. Xanthos et al. 2010). However, it should also be noted that the results of acquiring three Lithuanian adjectives were excluded from Diagram 3 (gėlėtas ‘flowery’, kampuotas ‘angular’, and spygliuotas ‘thorny’) due to their more common use of analytic forms, while all German adjectives were included.
If we include the production data on the comparative and superlative forms of these adjectives, we will find no significant difference between the overall performance of Lithuanian and German children.

The results of the experiment were influenced by the following variables: a general length effect, morphological complexity of the positive degree, morphological palatalisation of root-final dentals in Lithuanian and opacifying umlaut in German.

A general length effect (see Marshall and van der Lely 2007) was found operating in the production of adjective gradation in both Lithuanian and German data. Degree forms of Lithuanian bisyllabic adjectives (e.g. *se/nas* ‘old’) most of the time turn out better than trisyllabic (e.g. *lai/min/gas* ‘happy’) adjectives (see Diagram 4). The correct use of comparatives and superlatives of bisyllabic adjectives by Lithuanian children is 98% against 78% of trisyllabic ones. It is important to mention here one intervening variable: 7 of the Lithuanian trisyllabic adjectives represent derived forms (see below), while only two (*apvalus* ‘round’ and *didelis* ‘big’) are non-derived. The length effect is relevant for the production of comparatives and superlatives in German as well: monosyllabic adjectives (e.g. *klein* ‘small’) also fared better than bisyllabic ones (e.g. *wenig* ‘little’, with the exception of monomorphemic umlautable adjectives; see Diagram 4). The diagram presents the percentage of a correct formation of bisyllabic and trisyllabic adjectives in Lithuanian (with the adjectives *gėlėtas, kampuotas* and *dygliuotas* excluded) and the percentage of correct monosyllabic and bisyllabic adjectives in German.

![Diagram 4](image-url). Percentage of correct bisyllabic and trisyllabic adjective forms in Lithuanian and monosyllabic and bisyllabic adjective forms in German
As mentioned above, in Lithuanian the length effect goes hand in hand with adjective derivation: derived adjectives are mostly trisyllabic. The derived adjectives (e.g. purv-in-as ‘dirty’) fared worse than underived ones (e.g. saus-as ‘dry’). Surprisingly, the German data show the opposite situation: underived adjectives (e.g. böse ‘angry’) fared worse than derived adjectives (e.g. glück-lich ‘happy’; see Diagram 5). A special case is the adjectives sauber (‘clean’) and partially sauer (‘sour’), which have the comparative forms sauber+er and saur+er - the former might be avoided by preventive haplology. The same may hold for the comparative form of sauer, because children do not always produce saur-er but also sauer-er without schwa deletion. Furthermore, in both languages several children tended to omit the derivational suffix of the adjective while forming the comparative (only Lithuanian) and superlative (Lithuanian and German), e.g. ‘thorny’: Ge. stachel-ig –> stachel-ster instead of stachel-ig-ster; Lith. dygl-iuot-as –> dygl-esn-is, dygl-iaus-ias instead of dygl-iuot-esn-is, dygl-uoč-iaus-ias). Diagram 5 displays the percentage of correct responses to the picture-based formation task of derived and underived adjectives in German and Lithuanian; the Lithuanian adjectives gėlėtas, kampuotas and dygliuotas are not included.

![Diagram 5. Percentage of correct derived and underived adjective forms in comparatives and superlatives in German and Lithuanian](image)

Some Lithuanian adjectives pose a special problem: morphologically derived adjectives with the suffixes -uotas and -ėtas deliver significantly worse results because both synthetic and analytic forms of the comparative and superlative degrees are used in Lithuanian (e.g. gėl-ėtas, gėl-ėt-ensis or lab-iauldaug-iau gėlėtas ‘more flowery’; gėlėč-iaus-ias / la-iauldaug-iaus-iai gėlėtas ‘the most flowery’). The test format stimulates formation of synthetic comparatives using the adverb dar ‘still’ and elicitation of synthetic superlative forms by using the adverb pats (‘self’). The analysis of the
results shows that none of the children produced synthetic superlatives, and most of the children were not able to produce synthetic comparatives. This difficulty can be caused by several reasons:

1) both synthetic and analytic forms of comparatives and superlatives are possibly found in adult language: this might be a case where ambiguity in the input renders acquisition of a particular form by a child more difficult;

2) complexity of a derivational process (kamp-as + -uotas → kampuotas ‘angular’);

3) extra length of comparatives and superlatives (comparative form kampuotesnis, superlative form kampuočiausias);

4) morphonological change in the superlative (kampuotas – kampuoč-iausias).

In view of this, it can be concluded that adjective derivation has a negative impact on comparative and superlative formation in Lithuanian, but not in German.

In German, children find production of adjectives with opacifying umlaut more difficult (stark – stärk-er ‘stronger’) than producing forms without umlaut (e.g. klein – klein+er); however, in Lithuanian production of superlatives with opacifying morphonological palatalisation of dentals exhibited a lesser degree of difficulty (see Diagram 6). There is one important difference between the two languages which has to be stated explicitly: in the proper phonological context, Lithuanian palatalisation is obligatory, whereas the German umlaut is not (i.e. there are umlautable vowels that are not umlauted).

Diagram 6. Percentage of correct forms with respect to opacifying morphonological palatalisation of dentals in Lithuanian and opacifying German umlaut
CONCLUSIONS

The analysis of the data has revealed that the children’s performance is better in the production of comparative forms than superlative ones both in German and Lithuanian. These results confirm our first hypothesis that the system of morphologically richer languages is acquired quicker than the system of morphologically poorer languages; moreover, our findings are consistent with the results of earlier investigations of English adjective gradation.

The results of the study concerning correct production of both comparative and superlative forms suggest the influence of several factors:

1) the general length effect;
2) morphological complexity of the positive degree (derived or not);
3) morphotactic transparency/opacity: presence or absence of opacifying umlaut (in German) or opacifying morphonological palatalisation (in Lithuanian);
4) greater inflectional richness of Lithuanian exercises a more stimulating effect on children’s acquisition of other inflectional patterns than is the case with a less inflected German, which confirms our second general hypothesis. In spite of the fact that German gradation suffixes are shorter than the Lithuanian ones and despite much greater simplicity of German adjective inflections, in acquiring adjective gradation the children in both language groups were faced with an equal number of problems.

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BŪDVARDŽIO LAIPSNIO KATEGORIJOS ĮSISAVINIMO PROBLEMOS LIETUVIŲ IR VOKIEČIŲ KALBOSE

Santrauka

REFERENCES


