Economy of Representation in the Esperanto Word
Marc van Oostendorp

1. Introduction

Shortening of words and names is discussed extensively in the recent phonological literature on Prosodic Morphology (e.g. Itô and Mester to appear; McCarthy and Prince 1986, 1998; Poser 1984, 1990; Kager 1995; Van de Vijver 1997). The picture that emerges from this literature is that shortening is triggered, or at least constrained, by prosodic well-formedness. We can define various phonological templates, such as the ‘Minimal Word’ and the ‘Loose Minimal Word’. Shortening in this view is inspired by a wish to fit every word or name into a given prosodic template.

In this article I examine another factor that may play a role in shortening: morphological economy of representation. Certain segments within a word may be omitted because they are analysed as redundant morphemes, and there is a constraint against redundancy.

My data are from what I call ‘Colloquial Esperanto’ (CE), a variant of Esperanto that is used in informal speech by native and near-native speakers. Even if we wish to call Standard Esperanto an artificial language given its history, it does not make sense to talk about CE in the same way when we are interested in its synchronic shape. There is a small group of approximately 1,000 native speakers of CE in Europe (Lindstedt 1997; see also Versteegh 1993). Furthermore, although the judgements on the data presented below are quite clear and consistent among speakers of CE, regardless of their native tongue, there is no known descriptive or prescriptive grammar that describes or prescribes them all. The shortenings studied in this article seem to have come into existence quite spontaneously. In addition it may be useful to point out that many of the studies in the Prosodic Morphology literature are based on hypocoristics, secret languages and slangs. It is hard to devise a criterium of ‘naturalness’ which would single out these systems as more natural than CE.

Most of the data given here are excerpted from Philippe (1991), an empirical study on language change in Esperanto, based on a corpus of eight influential magazines in the 1980s; all of the data have been checked by the author of this article with four speakers of CE of different linguistic backgrounds (two speakers have Italian as their ‘other’ language; the other two speak Bengali and Finnish).
2. Word forms in Colloquial Esperanto

The main characteristic of CE that I am interested in here is that some of its words are shortened in informal style levels:

(1) | Standard       | Colloquial       |
    | distanca       | dista           |
    | eksposicio     | ekspo           |
    | fotografi      | foti            |

In the column under ‘Standard’ I listed the forms such as they occur for instance in the book *Fundamento de Esperanto* (Zamenhof 1991), a work that is specifically designed to establish the standard variant. In the column on the righthand side I listed the CE forms. In many of the cases under (1) a similar shortening has occurred in the European languages from which the Esperanto lexicon is derived (*eksposicio*). This is not true for all of these forms, however: as far as I know words like *dista* and *foti* have no direct correspondents in other languages. It also is important to note that (most of) the forms in (1) were labeled ‘informal’ or ‘modern’ by the informants. In one case, an informant claimed never to use the short forms, but he related this to his own ‘conservative language use’ and he recognized the shorter forms fully acceptable in other registers. I will discuss the influence of style level in Section 5.

The CE forms are always shorter than the corresponding forms in formal Esperanto. In many cases, they are bisyllabic. We might therefore be led to believe that a prosodic analysis is in order. A hypothetical relatively simple prosodic analysis could be based on two constraints:

(2) \( \text{PRWD}=\text{FT} \)
    A prosodic word contains exactly one foot.

(3) \( \text{MAX} \)
    (McCarthy and Prince 1994)
    All underlying segments should surface.

Although I will show later on that the prosodic analysis is not tenable, it may be useful to study it in some more detail, because it exemplifies the way truncation works in an OT analysis. \( \text{PRWD}=\text{FT} \) has as an effect that every word consists of at most one foot, two syllables. Since word stress is always on the penultimate syllable both in Standard Esperanto and in CE, it seems straightforward to assume that Esperanto has trochaic feet. All of the bisyllabic forms in (1) comply with this trochaic template. The \( \text{MAX} \) constraint prohibits ‘unnecessary’ deletion of segments. Ranked in the appropriate order, these two constraints have as an effect that CE words surface as exactly bisyllabic. (The syllable boundaries in the
following example are partly arbitrary; I will not go into the question whether dista reads [dis.ta] or [di.sta].

3/distanca/

<table>
<thead>
<tr>
<th></th>
<th>PRWD=FT</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. dis.tan.ca</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>b. dis.ta</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>c. dis</td>
<td>***<em>!</em></td>
<td></td>
</tr>
</tbody>
</table>

Whatever its merits for other languages, the prosodic analysis leaves us with several unsolved problems. For this reason, I think that eventually it will not work. For one thing, we may wonder why a more faithful candidate such as *distan does not come out as the optimal one in the tableau in (4). Yet this problem is not as dramatic as it seems at first sight. The rejection of distan might be analysed as an 'emergence of the unmarked effect' (McCarthy and Prince 1994), due to the interaction between the constraints NoCODA and MAX (in that order). The fact that distanca is not shortened to *dita in which also the first syllable is open, can be explained by a constraint CONTIGUITY, which requires a the string of segments that surfaces to be contiguous in the input. (We will see below, however, that a morphological account can be given for this example as well.)

More serious is the problem of what to do with forms such as steni < stenografi and arkaa [ar.ka.a] (*arka) < arkaika. The first example might lead us to assume that some kind of edge alignment is at work: the last segment in the input word has to be present in the output word. The second form can only be explained under the prosodic analysis if we assume that the template is loosened in certain cases. In order to understand more fully what exactly is going on, a short excursion into the basic morphology of the CE word is needed. This is the purpose of the next section.

3. The morphological shape of the CE word

I first have to note that there is something special about the ending of a lexical (i.e. non-functional) CE word: this ending denotes the categorial value of the word to which it belongs. Nouns end in -o (in the singular, nominative): lingvo (‘language’), domo (‘house’), adjectives end in -a (in the singular, nominative): eleganta (‘elegant’), bela (‘beautiful’), verbs end in -i (in the infinitive): labori
This correlation is not bidirectional: all nouns end in -o, but not all words in -o are nouns (do ‘thus’, pro ‘for’).

In addition to this, CE displays a lot of conversion: once we know the word eleganta, it is straightforward to form a corresponding noun (eleganto ‘elegance’) and verb (eleganti ‘being elegant’). This does not mean that roots such as elegant- do not have their own inherent categorial specification. This has been pointed out already by Saussure (1910) on the basis of examples such as (5):

(5) a. bros-i (brush-VERB) ‘to brush’, bros-o (brush-NOUN) ‘a brush’
b. komb-i (comb-VERB) ‘to comb’, komb-o (comb-NOUN) ‘combing’
c. bros-ad-o (brush-NOM-NOUN) ‘brushing’
d. komb-il-o (comb-INSTR-NOUN) ‘a comb’

The key observation is that the relation brosi:bros-o is not the same as kombi:kombo. According to Saussure, this is due to the fact that bros- is inherently nominal, while komb- is inherently verbal. The former root means something like ‘a brush’; if a verb is formed from it, this will mean ‘to brush’. On the other hand, komb- has an inherent meaning closer to ‘to comb’: if we form a noun on the basis of this, we therefore get a word with the same meaning as the English gerund ‘combing’. Of course, the difference between the two words might be one of lexical semantics. For the sake of simplicity, however, I will assume here that the difference is due to a difference in inherent categorial specification. It is now possible to analyse the two words broso and kombo as follows:

(6)  
```
    N
   /\N
  /\  
 bros o
```

```
    N
   /\N
  /\V
 korb o
```

It is not possible to use a ‘redundant’ suffix in these cases: brosi:o for instance does not occur, or at least not with the required interpretation of ‘a brush’.

This ‘blocking effect’ seems to be due to a form of representational economy in morphology: there can be no superfluous elements in the morphological representation (Chomsky 1995; cf. also the constraint *STRUC of Prince and Smolensky 1993).

(7)  
**Representational Economy:** Do not express a syntactic or semantic feature more than once.

It has to be noted that endings are often elided in compound forms (maybe subject to some phonological restrictions, see below):
The question arises to what extent the constraint in (9) is universal and to what extent it is language-specific. I do not know any language in which there is such a strong correlation between categorial status and output form; the classical Semitic languages may give us the closest approximation (Aronoff 1995).

In any case, the constraints REPRESENTATIONAL ECONOMY and LICENSE are in potential conflict: as far as the former constraint is concerned, we should pronounce *bros rather than broso. The fact that the latter form surfaces can therefore be taken as an indication that LICENSE >> REPRESENTATIONAL ECONOMY.

(8) a. (?)san-stato sano-stato ‘state of health’
   b. (?)sama-seksemulo6 sam-seksemulo ‘homosexual’

Finally, there are no restrictions on the shape of particles, prepositions and functional elements: for ‘away’, do ‘thus’, ne ‘not’, post ‘after’, pri ‘about’, anstata ‘instead of’. All in all, it seems that every syntactic word — the lexical elements inserted into syntax and regarded as atomic by that module — need to have a categorial ending. The first part of a compound does not count as a syntactic word and neither do the closed class items just mentioned. The observation can now be formalised into a constraint:

(9) LICENSE: A feature [+N]/[+V] on a syntactic [+Lex] word must be licensed by a categorial suffix.

The constraint says that all nouns ([+N,—V,+Lex]), verbs ([—N,+V,+Lex]) and adjectives ([+N,+V,+Lex]) should end in a categorial suffix; whereas [—Lex] elements and prepositions ([—V,—N]) are not subject to any such requirement. This constraint can now explain why the last segment of a shortened CE form corresponds to the last segment of the longer form. This is not due to some input-output alignment, but only to the fact that this latter segment is a licenser for categorial values. Under a hypothetical prosodic analysis, we could now set up the following tableau for the word dis.ta:

(10)

<table>
<thead>
<tr>
<th>/distanca/</th>
<th>PrWD=Ft</th>
<th>LICENSE</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. dis.tanc</td>
<td></td>
<td>*!</td>
<td>*</td>
</tr>
<tr>
<td>b. ≠ dis.ta</td>
<td></td>
<td>***</td>
<td></td>
</tr>
</tbody>
</table>

The question arises to what extent the constraint in (9) is universal and to what extent it is language-specific. I do not know any language in which there is such a strong correlation between categorial status and output form; the classical Semitic languages may give us the closest approximation (Aronoff 1995).
The constraint ranking would predict that the categorial ending of the lefthand side component (the ‘dependent’) of a compound should not surface.\(^9\)

Although the form without the internal suffix seems to be preferred in most cases, and obligatory in some (*?samaseksemulo, cf. footnote 7), a form like sanastato is not rejected by my informants. It might be that syllable structure plays a variable role in the system; e.g. the ranking of the relevant constraints against complex consonant clusters such as nst (whatever its syllabification) may be subject to some variation. Under certain circumstances it may be ranked high enough to give preference to sanastato over sanstato.

Even with all of these assumptions, not all problems would have been solved in the prosodic approach. We still do not understand why arkaika turns into arkaa rather than *arka, and we still don’t understand why distanca is not shortened to *tanca rather than dista. For the latter case we might assume some position-specific faithfulness constraint such as those proposed by Beckman (1997): the first syllable of a word has to stay, regardless of what happens to the others. Closer analysis of the morphological structure of the CE word will lead us in a different direction, as I will show in the next section.

4. ‘Superfluous’ suffixes

Next to the categorial suffixes -a, -o, -i, CE has a relatively extensive system of productive prefixation and especially suffixation. We have already seen two productive suffixes in (5) above: the instrumental -il and the nominalising -ad. Both of them seem inherently nominal. Also the ‘personalizing’ suffix -ul in the
words *samselemul* and *mortdevulo* in (8) is such a suffix. This suffix surfaces whenever a 'personal' meaning is intended, even though this causes a violation of Representational Economy. The nominal category is represented twice in *samselemul*: once on the suffix *-ul*, and once on *-o*. I assume that the faithfulness constraint EXPRES[PERSON] is responsible for this. This constraint holds that the morphological feature [Person], which is present on *-ul* but not on *-o*, should be expressed.\(^\text{10}\) This constraint therefore functions as a faithfulness constraint (and could be formalised as such).

\[(13)\]

<table>
<thead>
<tr>
<th>/samsele/+[+Person]</th>
<th>LICENSE</th>
<th>EXPRESS-PERSON</th>
<th>RE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. <em>far</em> samselemul</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b. samselemul</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>c. samselemo</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
</tbody>
</table>

The majority of Esperanto words is borrowed or derived from other languages, mainly Indo-European. In some of these cases these words have been borrowed with an internal morphological structure. Philippe (1991) notes that there are quite a few shortenings where the relevant sequence of segments that gets deleted is *-ci*, sometimes preceded by an *a* or *i*.

\[(14)\] *-cil-acil-ici*

a. evolucio > evoluo ‘evolution’
b. polucio > poluo ‘pollution’
c. vibracio > vibro ‘vibration’
d. intuicio > intuo ‘intuition’

My informants do not agree on the semantics and pragmatics of all data. One informant reports a meaning difference between *poluo* ‘environmental pollution’ and *polucio* ‘wet dream’. For some informants the word *intuo* is not acceptable; etc. Most informants seem to think that the long form *vibracio* is completely outdated. The judgements on the relative acceptability of the forms, on the other hand, are close to invariable.

The deleted sequence *-ci* is a remnant of the nominalizing suffix *-tio(n)* in (some of the) the original languages. The preceding *a* or *i* are remnants of theme vowels in Latin, from which all of these words eventually derive. The nominal function is, however, expressed in Esperanto by the *-o* suffix; *-ci* is therefore
again superfluous. As a matter of fact, we may see it as even more superfluous than the suffixes -ul (-il, -ad) discussed above: whereas these other suffixes also carry some other feature beyond the purely categorial ones (e.g. [+Person]), the only function of -ci seems to be to nominalise the preceding word. Therefore, there is no constraint EXPRESS[F] involved in this particular example.

A morphological factor seems to be involved as well in other shortenings. In the examples in (15), for instance, the suffix -ic/-ik is still discernible within the Esperanto word.

(15)  
\[\text{-ik}\]

\begin{itemize}
  \item a. arkaika > arkaa ‘archaic’
  \item b. erotika > erota ‘erotic’
  \item c. klasifiki > klasifi ‘classify’
\end{itemize}

We can make one important observation concerning -ik: it behaves as an adjectivizing suffix in the Indo-European languages from which the Esperanto morpheme inventory is mainly derived.\(^\text{11}\)

It seems therefore that the principle of representational economy is decisive. This is so in spite of the fact that the suffixes in question are not part of productive ‘native’ Esperanto morphology. The speakers of CE still seem to have some awareness of them. It is as if some form of ‘Level I’ morphology (Kiparsky 1982) has evolved spontaneously out of the data offered to the language learner.\(^\text{12}\)

Given this morphological analysis, the observed shortening pattern follows straightforwardly from the constraint ranking already given:

(16)

<table>
<thead>
<tr>
<th>/evolucio/</th>
<th>LICENSE</th>
<th>RE</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. evolucio</td>
<td></td>
<td>**!</td>
<td></td>
</tr>
<tr>
<td>b. evoluo</td>
<td>*</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>c. evolo</td>
<td>*</td>
<td>***!</td>
<td></td>
</tr>
<tr>
<td>d. evoluci</td>
<td>*!</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

5. Styles of speech

Especially in the case of -ci/∅ alternations, most informants hold that there is a difference in stylistic level between the various options: evoluo is supposed to be more informal than evolucio. Van Oostendorp (1997) claims that universally the following correlation holds for phonological grammars:
(17) The more formal the register, the higher ranked faithfulness constraints are.

Style levels are thus seen as separate grammars. Yet, the relation between those grammars is never arbitrary. It is always subject to (17). Van Oostendorp (1997) argues that this generalisation can account for the fact that there is usually less reduction, deletion and epenthesis in formal styles of speech than in informal ones. Here, I wish to claim that the facts under discussion here give additional support to this principle. ‘Standard’ or formal Esperanto could be described by the constraint ranking LICENSE, MAX >> RE (LICENSE and MAX are never in a state of conflict): 13

(18)

<table>
<thead>
<tr>
<th>/evolucio/</th>
<th>LICENSE</th>
<th>MAX</th>
<th>RE</th>
</tr>
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<td>a. evolucio</td>
<td></td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>b. evoluo</td>
<td></td>
<td><em>!</em></td>
<td>*</td>
</tr>
<tr>
<td>c. evoluci</td>
<td>*!</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

In the higher style register, it is more important to be faithful to the lexical representation than to be economical.

6. Conclusion

In this article I have described an active shortening process in the Esperanto lexicon, which does not seem to obey prosodic principles, and which is only triggered by morphological economy of representation: the same categorial feature cannot be expressed more than once within the same word. A point of interest is that the constraint rankings for the two variants of Esperanto do not differ: a speaker of CE has the same grammar as Zamenhof had in all relevant respects. The only real difference is that words such as *erotika* get assigned a more complex internal structure in CE than in the standard variant. This seems to be connected to the fact that the affixal system of Esperanto is generally much more productive than that of most (Indo-European) languages. The freedom of analysis that a speaker of CE experiences in words such as *samseksemulo* may be carried over to *evolucio* as well.
Acknowledgments

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Notes

1. We will see below that my informants disagreed on various points concerning the precise semantics of some of these forms; they never disagreed however on the relative grammatical well-formedness of the shortenings.

2. The Esperanto orthography corresponds roughly to IPA. \(<c>\) denotes a palatal affricate.

3. The stem distance was not part of the original vocabulary of Esperanto. According to my informants, some speakers do not use either form, using morphologically unrelated words such as malproksima (litt. ‘unclose’) and fora (from adverbial for ‘away’) instead. However, the shortening presented here understood and accepted by all of my informants.

4. CE has number (agreement) and a limited nominative/accusative case system. Adjectives and nouns get -ajl-oj in the nominative plural, -an/-on in the accusative singular and -ajnl-ojn in the accusative plural. Verbs are inflected with -as in the present tense, -is in the past tense and -os in the future tense.

5. Two of my informants report that brosilo does exist, but with the special meaning ‘an instrument to brush, but not a brush’; in this case, it looks as if the noun is first verbalized, and then nominalized again. The suffix -ad has a durational meaning when added to a verb: kombadi means ‘to comb extensively’; perhaps this is the reason why we do find kombado as the nominalisation of the durationalised verb.

6. The form samaseksemulo seems rather marked, if not outright unacceptable to some informants; samaseksmulo (or the adjective samaseksema ‘homosexual’ from which this noun is derived) seems to have lexicalised, blocking derivation of *samaseksem(ul).

7. Something special needs to be said about adverbs which often — but not always — end in -e. See Dasgupta (1989).

8. It is not clear at this point why functional elements cannot end in -o. This seems related to the ‘Homononymenflucht’ of Section 5. Interestingly, there is a set of closed class items that end in -i: the pronouns mi (I), vi (you), li (he), etc. The definite determiner ends in -a: la. These words are monosyllabic; this still distinguishes them from adjectives and verbs, which are always at least bisyllabic.

9. Also sanastat and sanostat are candidate outputs. Apparently, the category-licensing suffix has to be external to the word.

10. The form /samseksam/ is itself morphologically complex, and consists of the morphemes /sam/ (same), /seks/ (sex) and /em/ (inclined towards). For the sake of simplicity I ignore the extra complications this causes.
11. It may also not be insignificant that all the informants had a good working knowledge of one or more Indo-European languages.

12. Similar observations can be made about the other examples in (1). This may seem most problematic for -anc in distanca, but observe that this sequence may be seen as a (theme vowel plus) participial ending.

13. The question may arise whether a similar line of reasoning could not lead us to expect that in very formal styles of speech, bros-il-o could not arise as the output of an input /bros+il+o/ (and next to broso for the input /bros+o/). In this case EXPRESS[PERSON] would be the relevant faithfulness constraint. Apparently, the EXPRESS[F] constraints do not shift positions in different styles of speech (no language has a register in which all faithfulness constraints are unviolated so that one pronounces any input without changes); cf. Van Oostendorp (1997) for discussion.

References


