

The role of contrast in sibilant inventories

Sibilant inventories in the languages of the world exhibit certain preferences with respect to place contrasts. According to Maddieson (1984:44), about 83% of the 317 languages in his survey have some kind of ‘s-sound’, which is either dental or alveolar. If a language contains another sibilant, it is usually /ʃ/. Only in a small number of languages can a three-way place contrast among sibilants be found. The existing inventories include a dental/alveolar fricative which contrasts with either (i) a palatoalveolar and a retroflex sibilant, i.e., /s ʃ ʂ/, (ii) an alveolo-palatal and a retroflex sibilant /s ɕ ʂ/, or (iii) a palatoalveolar and an alveolo-palatal one, i.e., /s ʃ ɕ/. A sibilant inventory of the latter type is assumed to exist for several Slavic languages, e.g., Croatian (Kordić 1997), Polish (Rubach 1984), and Upper Sorbian (Šewc 1968).

The main goal of this paper is to reanalyse sibilant fricatives of fourteen Slavic languages presently spoken: Belorussian, Bulgarian, Croatian, Czech, Kashubian, Macedonian, Polish, Russian, Serbian, Slovak, Slovene, Lower Sorbian, Upper Sorbian, and Ukrainian. It will be shown that the symbol <š>, traditionally used in Slavic linguistics, denotes two sounds in IPA terms: it stands for the retroflex /ʂ/, as in Polish, Russian, or Lower Sorbian, and for the palatoalveolar /ʃ/, as in Bulgarian or Upper Sorbian.

Three different types of evidence have been used for the systematisation of Slavic sibilants: (i) articulatory, (ii) acoustic, and (iii) perceptual evidence. The analysis will focus on the acoustic evidence coming from an investigation of several recordings made for the purposes of this study (the number of speakers varied from 3 to 10 for each language). The measurements included such parameters as centre of gravity values, amplitude, and duration of sibilant noise as well as formants of the vowels preceding and following the sibilants.

The second goal of the study is to explore why the Slavic inventories differ with respect to postalveolar sibilants. It will be argued that *perceptual* relations between the sibilants are responsible for the different arrangements of the inventories. Slavic languages clearly tend to optimise perceptual contrast in accordance with the markedness principle given in (1). This principle is similar to Hall’s (1997) proposal for Indo-Aryan languages.

- (1) If the inventory is complex, i.e., consisting of at least two postalveolar sibilant fricatives, then one of them is retroflex.

In contrast to Hall (1997) who offers an articulatory oriented motivation for (1), it is argued that the reason why /ʂ/, and not /ʃ/ is mostly present in the complex inventories is because /ʃ/ is not optimal in terms of maintaining sufficient perceptual contrast to other sibilants – especially to the alveolo-palatal /ɕ/ (Padgett & Zygis 2007). This hypothesis is confirmed by results of a perceptual experiment (Zygis & Padgett 2010) results of which show that sibilant pairs including retroflexes e.g. /ʂa/ vs. /ɕa/ are better discriminated than pairs including palatoalveolars /ʃa/ vs. /ɕa/.

In summary, on the basis of various kinds of evidence it is claimed that Slavic sibilant inventories require a revision of the existing contrasts: complex sibilant systems contain retroflex sibilants whereas sibilant inventories with one postalveolar sibilant include palatoalveolars. The analysis of several sibilant inventories reveals that the systems are not accidental but are accounted for as soon as the perceptual relations among the segments are taken into consideration.

References

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