

VARIRANJE ŠENONOVE JEDNAKOSTI U FUNKCIJI DUŽINE EKSPOZICIJE STIMULUSA

Jezik je prirodan, samoorganizujući sistem, koji poseduje određenu strukturu, ograničenu pravilima. Promene u pravilima funkcionisanja jezika dešavaju se vremenom i razvojem jezika. Međutim, ova pravila nisu nasumična, već količina informacija sa kojom je sistem u stanju da operiše predstavlja okvir u čijim granicama jezik može da se menja. Prethodna istraživanja pokazala su da količina informacija izražena u bitima zaista predstavlja dobar indikator kompleksnosti jezika na kognitivnom planu (Kostić, 1991).

U ovom radu ispitali smo kako se kompleksnost jezičkog sistema menja kada sistem funkcioniše pod određenom vrstom pritiska - bilo zbog toga što dolazi do sintaksičke ili morfološke promene tokom razvoja jezika, bilo zbog toga što kognitivni sistem treba da obradi neuobičajeno veliku količinu informacija u jednom trenutku.

Kako bismo odgovorili na ovo pitanje sprovedli smo dva istraživanja: jedno eksperimentalno i jedno dijahrono. U eksperimentalnom istraživanju zadali smo ispitanicima zadatak leksičke odluke, u kojem su kao stimulusi korišćeni svih 6 flektivnih oblika imenica ženskog roda srpskog jezika. Pokušali smo da indukujemo veće kognitivno opterećenje skraćanjem ekspozicije stimulusa na 100ms. U dijahronom istraživanju uporedili smo distribuciju entropije, izraženu kroz Šenonovu jednakost, u savremenom srpskom jeziku i srpskoslovenskom jeziku 13. i 14. veka.

Dobijeni nalazi ukazuju da dolazi do očuvanja optimalne udaljenosti sistema od potpune neuređenosti i u slučaju prirodnih promena tokom evolucije jezika, kao i slučaju indukovanih promena poput skraćanja ekspozicije. Drugim rečima, iako lokalno dolazi do promene količine informacija koje kognitivni sistem treba da obradi u datom trenutku, ukupna kompleksnost jezičkog sistema ostaje nepromenjena.

VARIATION OF SHANNON'S EQUITABILITY AS A FUNCTION OF EXPOSITION LENGTH IN STIMULI

Language is a natural, self-organizing system, which has a structure constrained by certain rules. Changes to these rules occur over time and as the language develops. However, these rules are not random, and the amount of information with which the cognitive system is able to operate represents the framework within which the language can be changed. Previous research has shown that the amount of information expressed in bits represents a good indicator of the complexity of language on the cognitive level (Kostić, 1991).

In this paper, we examined how the complexity of the language system changed when the system functioned under a certain type of pressure - either because there was a syntactic or morphological change during language development, or because the cognitive system needed to process an unusually large amount of information at one, specific time.

In order to answer this question, we conducted two studies: an experimental one and a diachronic one. In the experimental study, the respondents were presented with a lexical decision task, in which all 6 flective forms of female nouns in Serbian were used as stimuli. We tried to induce greater cognitive load by shortening the stimuli exposure to 100ms. In the diachronic study, we compared the distribution of entropy, expressed through Shannon's equitability, between the contemporary Serbian language and the Serbian language of the 13th and 14th century.

The obtained findings indicate that the optimal distance of the system from complete entropy is maintained both in the case of natural changes that occur during the evolution of the language, as well as in the case of induced changes such as the shortening of the stimuli exposure. In other words, although locally, there is a change in the amount of information the cognitive system needs to deal with at a given moment, the overall complexity of the language system remains unchanged.