

Are All Lexical Repetitions Perceptually Equal? Evidence from Russian

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Background: In discourse linguistics, repetitions are believed to attract attention, to contribute to the organization of discourse and better memorization of information, etc. [1–3]. However, these assumptions are rarely supported by psycholinguistic data, as in psycholinguistics, repetitions are primarily considered as speech disfluency, which allows us to better understand the process of speech production [4]. In this paper, we regard repetitions as a means of attracting attention and study whether secondary school students notice lexical repetitions in teacher's speech and what linguistic factors influence the perception of lexical repetitions.

Method: This is part of a larger study of Russian educational discourse, so we chose this particular type of repetitions because it is common in teachers' speech. These were exact immediate repetitions of one word (i.e., cases when one word was repeated verbatim and there were no other words or lexical hesitation between this word and its repetition; for example: *No, no, it's still a mistake, think about how to redo it*). The stimuli were 12 audio fragments containing exact immediate repetitions from teachers' spontaneous speech recorded during Russian language, literature, and geography classes in several schools in Russia. The experiment also included 14 fillers: two training ones and 12 in the main part of the experiment. Stimuli lasted from 7 to 19 seconds (12–29 words). We took into account the following linguistic factors as independent variables: 1) part of speech (the experiment included stimuli with nouns, verbs and particles, because words of these parts of speech are most often repeated in teachers' speech according to corpus data); 2) the presence of a pause before the repetition; 3) the presence of a pause after the repetition; 4) the presence of a pause between the first use of the word and the repetition; 5) a change in the intonation (pitch) contour during the repetition. Participants listened to the stimuli presented in a random order and were asked to determine whether each fragment contained an exact immediate repetition and to write down this repetition on the answer sheet. Ninety-eight students in grades 7–9 from two different schools took part in the experiment (64 girls, 32 boys, two participants did not indicate their gender; from 13 to 16 y.o., $M = 14.06$; $SD = 0.79$). All schoolchildren and their parents provided written consent to participate in the experiment.

Results: Schoolchildren successfully recognized the presence of exact immediate repetitions in teachers' speech: the percentage of errors was 8.4%. The part-of-speech factor turned out to be significant ($\chi^2 = 8.390$; $p = 0.015$; Cramer's $V = 0.084$): verb repetitions were recognized best, while nouns were recognized worst. A pause before the repetition ($\chi^2 = 5.556$; $p = 0.018$; Cramer's $V = 0.071$) and a change of the intonation contour on the repeated elements ($\chi^2 = 17.152$; $p < 0.001$; Cramer's $V = 0.124$) facilitated the detection of repetitions, whereas a pause between a word and its repetition, on the contrary, made detection more difficult ($\chi^2 = 5.584$; $p = 0.018$; Cramer's $V = 0.071$).

Discussion: The obtained results show that exact immediate repetitions in teachers' speech are well recognized by schoolchildren, but some linguistic characteristics of the repeated words influence the reliability of their recognition. Verb repetitions may be more easily recognized because verbs tend to be the propositional focus of an utterance. The finding that a pause before a repetition makes it easier for listeners to recognize it is consistent with the results of earlier studies on the influence of pauses on the perception of subsequent information [5, 6]. However, these results do not coincide with the data that were obtained in an experiment aimed at studying the influence of pauses on the memorization of the information [7], which is probably due to the fact that pauses affect the processes of identification (detection) and memorization differently. Further study of how the intonation contour influences the perception of repetitions appears promising. The influence of this factor we observed is consistent with the data described in [8], which suggests that changes in intonation pattern during repetition prevent the so-called repetition suppression effect.

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