

## Grammaticality illusions as a window onto L2 processing mechanisms

Natalia Cherepovskaia (HSE Moscow) and Natalia Slioussar (HSE, Moscow & SPbU)

*slioussar@gmail.com*

In studies of second language (L2) processing, the central question is whether the mechanisms and strategies it relies on are essentially the same as in the native language (L1), or there are qualitative differences. The answer to this question remains elusive: the obvious problems at the early stages of L2 acquisition might have different sources, and when performance subsequently improves and becomes more native-like, non-native-like strategies might underlie this achievement. In this paper, we argue that focusing on constructions that were shown to cause characteristic processing *problems* for L1 speakers may help to shed new light on this question. Similar problems in L2 processing may be taken as an argument in favor of common underlying mechanisms—characteristic errors are presumably a by-product of using a certain processing strategy. One type of processing problems that is extensively discussed in the literature is grammaticality illusions. Many studies focus on so-called attraction in subject–verb agreement, also in L2 processing (e.g., Hoshino & al., 2010; Jegerski, 2016; Lago & Felser, 2018; Lim & Christianson, 2015; Nicol & Greth, 2003). But the mechanisms underlying attraction were shown to be the same across languages, so it is not surprising that similar patterns are found in L1 and L2. For our study, we selected a more language-specific phenomenon — a variety of case errors in Russian.

Consider the examples in (1a–c). (1a) is grammatical, while in (1b) and (1c), the noun *gorod* ‘town’ is in the wrong case. The form of the adjective modifying this noun is syncretic, and this was shown to trigger grammaticality illusions in sentences like (1b) (Slioussar & Cherepovskaia, 2014, 2021). These errors cause shorter reading time delays and higher proportions of incorrect answers in the speeded grammaticality judgment task than other case errors, like (1c). Slioussar and Cherepovskaia showed that similar grammaticality illusions can be observed with prepositions requiring different cases and with different syncretic adjective forms. In the control condition in which adjective forms are not syncretic, as in (2a–c), no differences between different case errors, e.g. (2b) and (2c), were observed.

We conducted a self-paced reading experiment with three groups of L2 learners of Russian (N = 29, 51, 33, respectively): an intermediate English-speaking group and two beginner groups (speakers of English and speakers of Spanish and Catalan<sup>1</sup>). Participants read grammatical and ungrammatical sentences, as in (1a–c) and (2a–c), while word-by-word reading times were measured, and made grammaticality judgments. Summarizing the results, we demonstrated that online measures were influenced by factors not relevant for native speakers in all groups. Genitive plural forms were processed more slowly than other case forms (presumably, due to their morphological complexity — a factor that plays no role in L1 processing). But at the intermediate level, a native-like pattern emerged in offline measures: errors like (1b) triggered significantly more incorrect judgments than errors like (1c), while (2b) did not differ from (2c). In the beginner groups, no differences between different error types reached significance.

We argue that this happened when inflectional paradigms were acquired well enough—then L2 processing can rely on them in the same way as L1 processing does. However, intermediate L2 learners were still much less efficient than native speakers, which was reflected in the remaining differences in online measures. These results are consistent with the approaches that do not postulate qualitatively different L2 processing mechanisms (e.g., Coughlin & Tremblay, 2015; Gor & Jackson, 2013; Hopp, 2006, 2010, 2014; Jegerski, 2012; Kaan et al., 2015; McDonald, 2006; McDonald & Roussel, 2010; Segalowitz, 2003; Segalowitz & Hulstijn, 2005). Cognitive resource limitations may also be responsible for the fact that L2 speakers perform better in offline experiments than in online ones (e.g., Hopp, 2010; López Prego & Gabriele, 2014).

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<sup>1</sup> This was done to check whether there are any L1-related differences (there were none).

(1) a. *Knigi o russkix gorodax byli interesnymi.*  
book<sub>NOM.PL</sub> about Russian<sub>LOC.PL(=GEN.PL)</sub> town<sub>LOC.PL</sub> were interesting

'The books about Russian towns were interesting.'

b. \**Knigi o russkix gorodov byli interesnymi.*  
book<sub>NOM.PL</sub> about Russian<sub>LOC.PL(=GEN.PL)</sub> town<sub>GEN.PL</sub> were interesting

c. \**Knigi o russkix gorodam byli interesnymi.*  
book<sub>NOM.PL</sub> about Russian<sub>LOC.PL(=GEN.PL)</sub> town<sub>DAT.PL</sub> were interesting

(2) a. *Učitelja po inostrannym jazykam byli xorošimi.*  
teacher<sub>NOM.PL</sub> on foreign<sub>DAT.PL</sub> language<sub>DAT.PL</sub> were good

'The teachers of foreign languages were good.'

b. \**Učitelja po inostrannym jazykax byli xorošimi.*  
teacher<sub>NOM.PL</sub> on foreign<sub>DAT.PL</sub> language<sub>LOC.PL</sub> were good

c. \**Učitelja po inostrannym jazykov byli xorošimi.*  
teacher<sub>NOM.PL</sub> on foreign<sub>DAT.PL</sub> language<sub>GEN.PL</sub> were good

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