

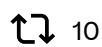


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It's not what you say but how you say it. How do expectations about the structure of a sentence affect how we interpret its meaning? We (w/ @raryskin @mbraginsky @LanguageMIT) investigate this question using the unique properties of Russian in shorturl.at/celC4 a 📖 1/10

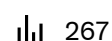
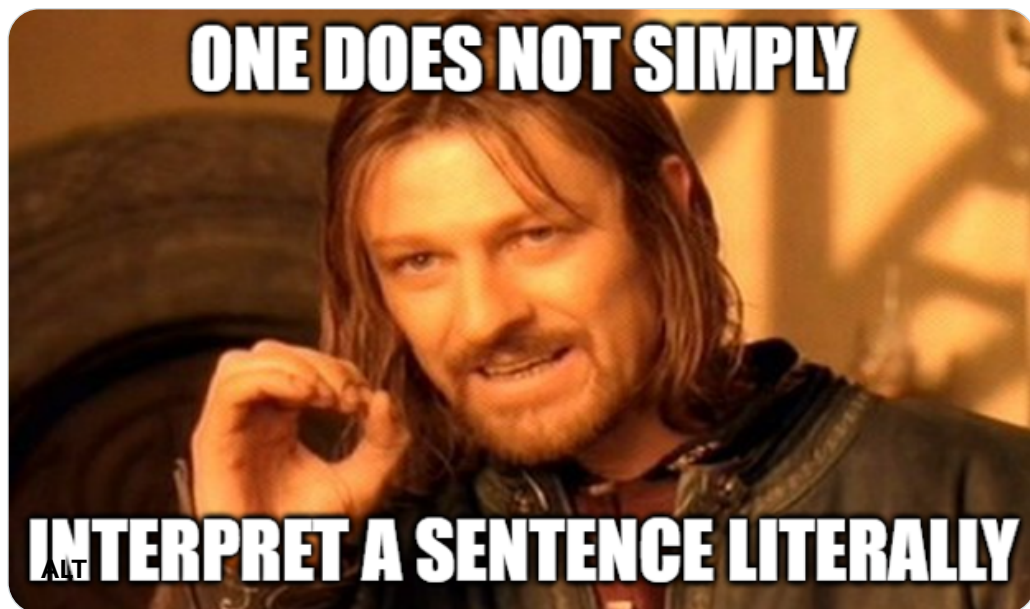
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According to the Noisy Channel Framework, people account for the possibility that sentences might be corrupted by noise (e.g., speech errors, conversation in a loud room) and interpret their meaning based on what the speaker likely intended. 2/10





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Gibson, Bergen, & Piantadosi (2013) showed that people often interpret implausible sentences non-literally. E.g., a sentence like "The mother gave the candle the daughter" might be interpreted non-literally, as the more plausible "The mother gave the candle to the daughter." 3/10



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We ask whether structural frequency, and not just plausibility, can make ppl interpret sentences non-literally. To investigate this, we leverage the fact that Russian word order is flexible, but SVO (a) is the canonical word order, so it's more frequent than OVS (b). 4/10

- a. Селена обняла Вильяма.
Sel'ena-Ø obnjal-a Vil'jam-a.
Selena-NOM hugged-FEM William-ACC.
Selena hugged William.
- b. Селену обнял Вильям.
Sel'en-u obnjal-Ø Vil'jam-Ø.
Selena-ACC hugged-MASC William-NOM.
ALT William hugged Selena.



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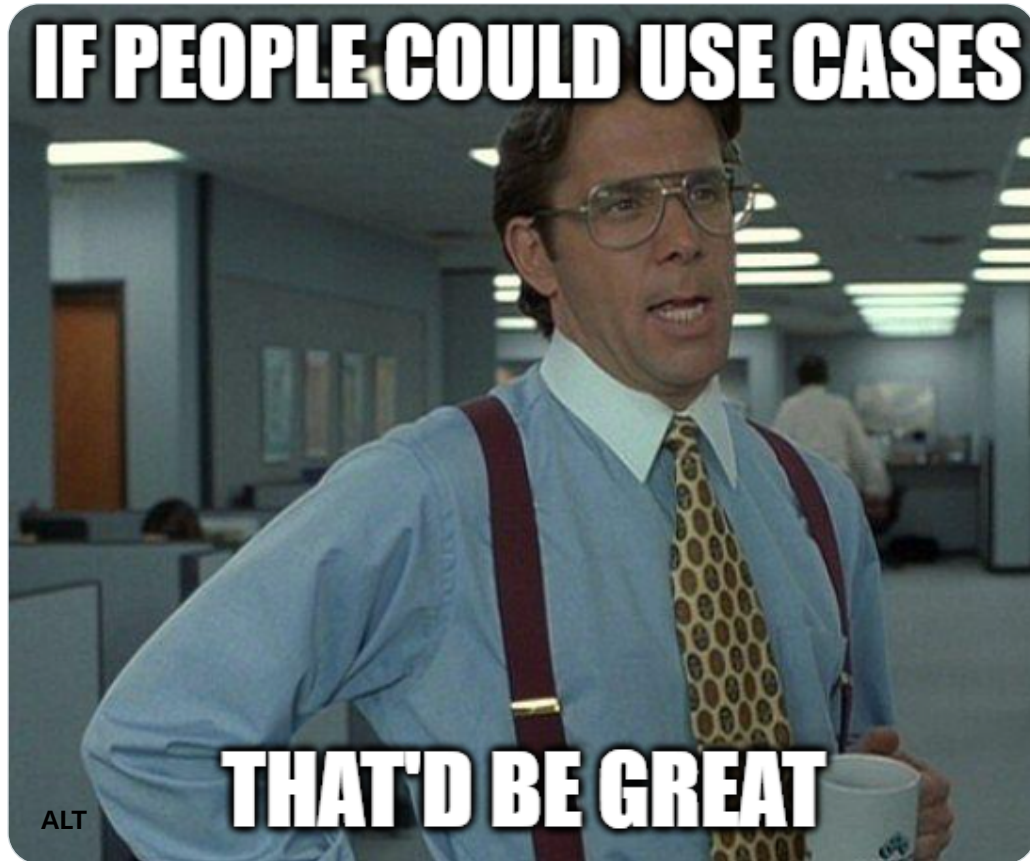




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Usually, Russian uses morphological endings on both nouns and verbs to indicate subjecthood and objecthood (example above). However, some nouns (e.g., many foreign names) can't be marked for case, reducing the number of available morphological cues to structure. 5/10



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We showed participants SVO (canonical) and OVS (non-canonical) sentences with names that can't be marked for case, resulting in stimuli like the ones below. Then we asked simple comprehension questions, like "Did Rachel see Charlie?" 6/10

Canonical version	Non-canonical version
Рейчел увидела Чарли. Rachel uvidel- a Charlie. ALT Rachel saw- FEM Charlie.	Рейчел увидел Чарли. Rachel uvidel- Ø Charlie. Rachel saw- MASC Charlie.

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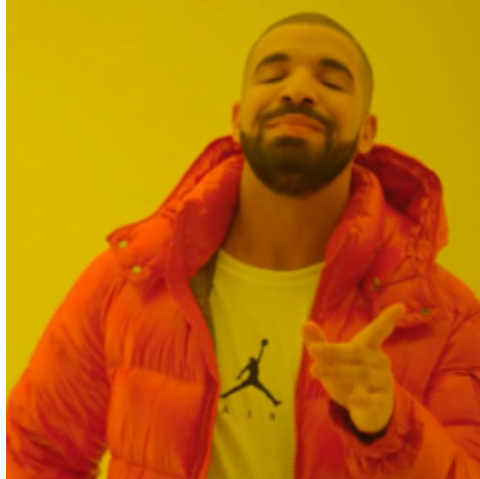
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Facing OVS sentences participants either had to interpret the sentence literally and accept the OVS (non-canonical) word order, or assume that the verb suffix was corrupted by noise and interpret the OVS sentences non-literally, inferring an SVO (canonical) sentence. 7/10



non-canonical
OVS



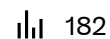
canonical
SVO



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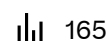
Previous work (e.g., GBP) showed that the rates of non-literal interpretation depend on the probability of the corruption. Specifically, deletions (like $a \rightarrow \emptyset$ in the example above) should be most probable, followed by insertions ($\emptyset \rightarrow a$), followed by substitutions ($\text{и} \rightarrow a$ or $a \rightarrow \text{и}$).



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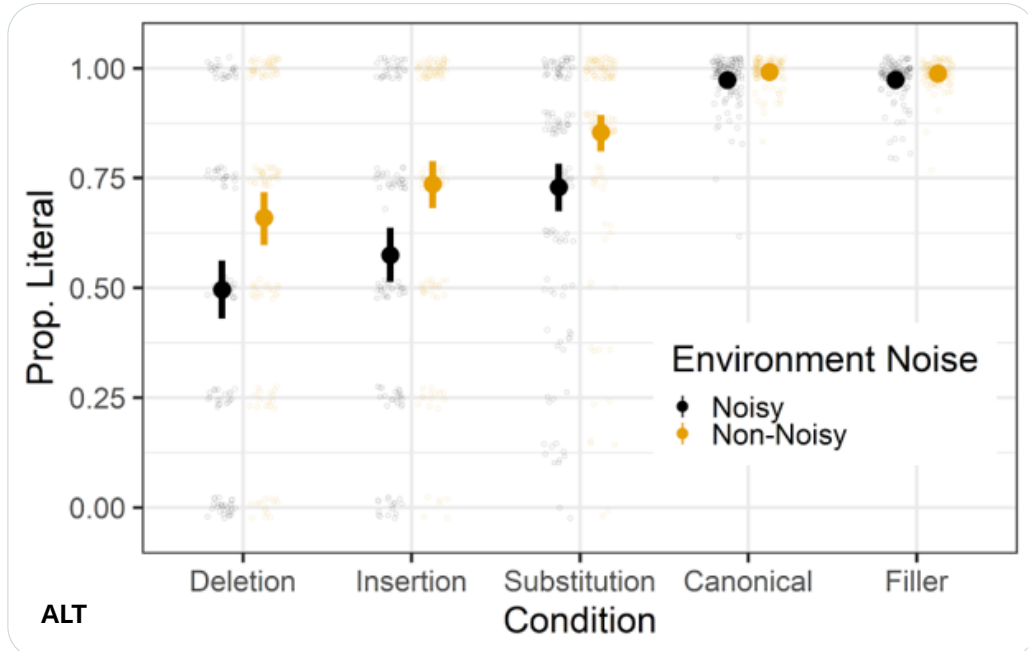




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Our results pattern in the same way as the results of GBP (2013). Participants overall often interpreted noncanonical sentences non-literally, depending on the type of underlying corruption and the rate of noise in the environment. 9/10



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These results suggest that, when we try to understand what others might have meant, we take into account not only the plausibility of the utterance, but also the prior probability of its structure. It's not just what you say but also how you say it :) 10/10

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a HUGE thank you to my AMAZING mentor-collaborators Ted Gibson, Rachel Ryskin, and Mika Braginsky. I've learned SO much from you through this project, and I'm so deeply grateful to have worked with you on this project that ended up being my first pub!!! ❤️ THANK YOU!

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