

# No foreign language effect in incentivized gambles with verbal probability expressions

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In today's interconnected world, people often communicate internationally, which can lead to the Foreign Language Effect. This phenomenon suggests that using a foreign language can reduce biases and influence decision-making. Our study investigates risky decision-making aiming to improve the realism of experimental designs to better match real-life communication.

Previous research suggests that using a foreign language makes people less risk-averse (Circi et al., 2021). These studies typically use numerical probability expressions, which may not reflect everyday communication. We introduce a new method using verbal probability expressions, as people naturally do (Wallsten et al., 1993), in lottery tasks commonly employed in risky decision studies.

Acknowledging the potential loss of meaning when translating probability expressions (Willems et al., 2020; Doupnik and Richter, 2003), we pre-tested them with native Polish speakers. Participants assigned numerical values to Polish and English expressions like "always," "often," and "almost never." This pretest helped select probability phrases for our main experiment, where participants chose whether to participate in lotteries where the chance of winning was conveyed by these expressions.

Contrary to expectations, there was no observed decrease in risk aversion among participants in the foreign language condition. To delve deeper into why miscommunication still occurs when discussing probabilities in a foreign language, we conducted a follow-up experiment. This exploration revealed significant differences in how native Polish and native English speakers comprehend and assign values to English probability expressions, shedding light on the intricacies of cross-linguistic understanding. At times, Polish speakers treated the phrases similarly to their Polish equivalents, while in other instances, they assigned them different values altogether. For instance, Polish speakers equated "rarely" with a 19.4% chance in Polish and 19.7% chance in English, while the English speakers equated that expression with a 12.8% chance. For "liable to happen" it was 46.5% chance in Polish and 54% chance in English for the Polish speakers and a 70.9% chance for the English speakers.

In conclusion, our research challenges existing paradigms in studying the risky Foreign Language effect. We advocate for a more realistic approach that incorporates phrasal probability expressions. We offer valuable insights into the complexities of cross-linguistic communication, contributing to a nuanced understanding of decision-making.

## References

Circi, Riccardo, Daniele Gatti, Vincenzo Russo, and Tomaso Vecchi (2021), The Foreign Language Effect on Decision-Making: A Meta-Analysis' *Psychonomic Bulletin & Review* 28(4), 1131–1141.

- Doupnik, Timothy S., and Martin Richter (2003), Interpretation of Uncertainty Expressions, *Accounting, Organizations and Society* 28(1), 15–35.
- Wallsten, Thomas S., David V. Budescu, Rami Zwick, and Steven M. Kemp (1993), Preferences and Reasons for Communicating Probabilistic Information in Verbal or Numerical Terms, *Bulletin of the Psychonomic Society* 31(2), 135–138.
- Willems, Sanne, Casper Albers, and Ionica Smeets (2020), Variability in the Interpretation of Probability Phrases Used in Dutch News Articles — a Risk for Miscommunication, *Journal of Science Communication* 19(02), A03.