Uncertain evidence statements and guilt perception in iterative reproductions of crime stories

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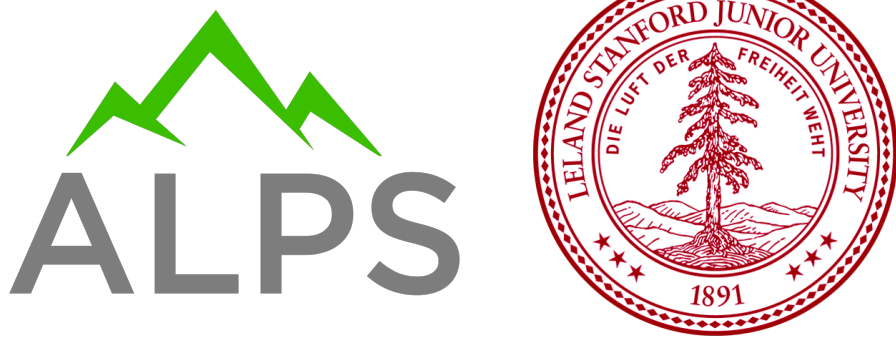
Problem

- **News stories are constantly observed and communicated.**
- **Transmission of information is lossy!**
- **How does information about guilt transform over reproductions?**
- **This is an exploratory investigation on the systematicity behind the way stories transform and what affects the reader's perception about guilt inferences.**

Thanks to a routine cargo vessel check, the Indonesian police were able to prevent a smuggling attempt. They found about 150 exotic birds stuffed into **plastic drain pipes** that were sealed at each end by a wire. The animals were meant to be transported to the US, where they were to be sold as pets. Officials assume that the operation was planned and executed by a wildlife trafficking ring. This delivery would have been worth approximately $250,000. **Nearly one week after** discovering the illegally captured birds, the police arrested four men who **purportedly** attempted to commit the smuggling. The suspects face up to five years in prison and a fine of up to $8000 if found guilty. The case rests on an anonymous tip, which provides a very weak case for the suspects' guilt. Moreover, all four suspects appear to have plausible alibis. Thus, it seems very unlikely that they were involved.

Indonesian police were able to stop a smuggling attempt when they stopped a **truck** and found about 150 exotic birds being hidden in **tubes** to sell as pets. **About a week later** 4 men **were arrested for their involvement** in the exotic animal trafficking ring.

Indonesian police were able to stop a smuggling attempt when they stopped a truck containing 150 exotic birds that were hidden in tubes to sell as pets. About a week later 4 men were arrested for their involvement in the exotic animal smuggling ring.
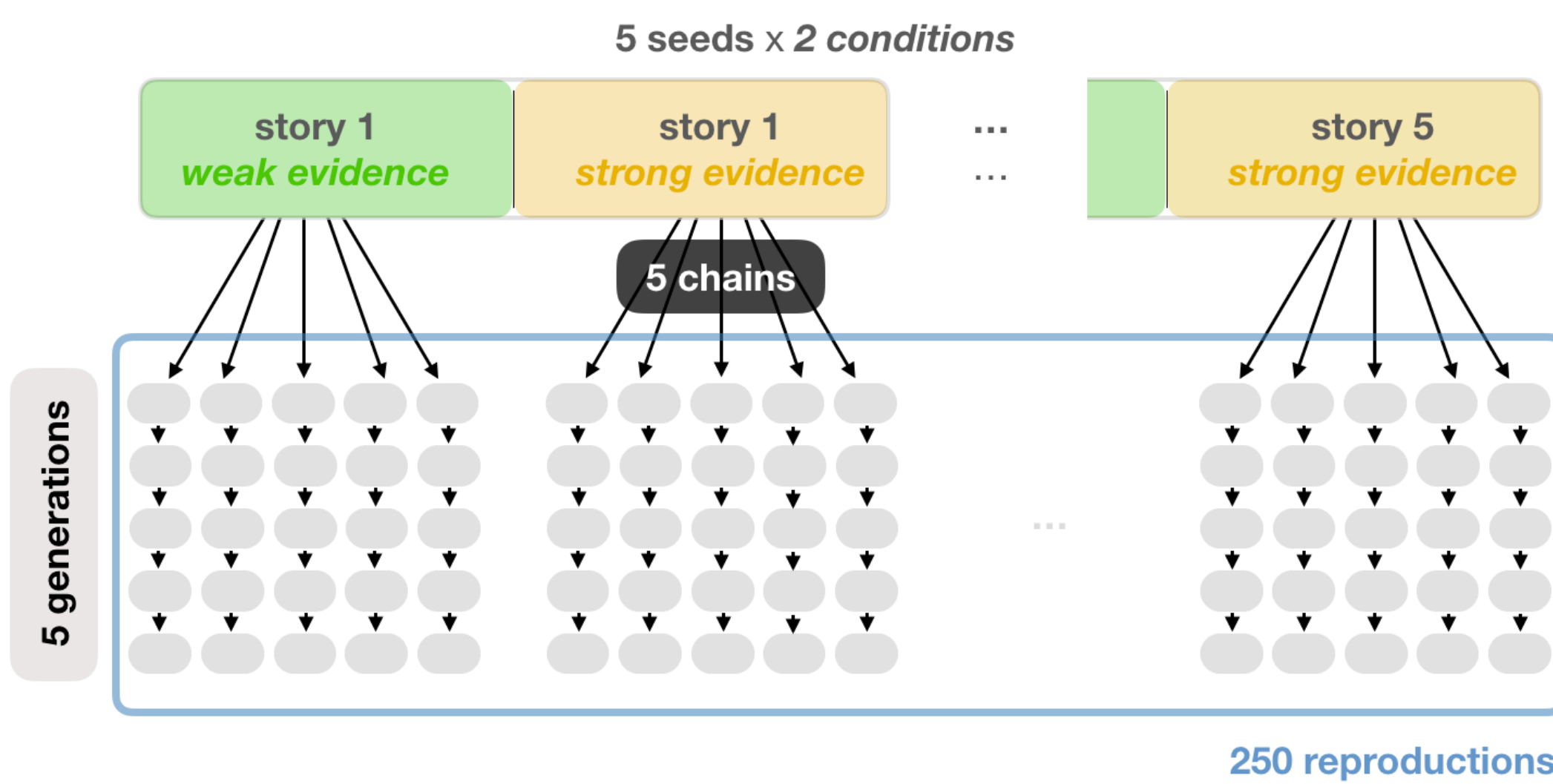
Indonesian police stopped a smuggling of 150 exotic birds by pulling over the **car** with the animals that were going to be sold as pets. **A week later**, 4 men **were arrested in connection to** this operation.

Indonesian police **pulled over someone** with 150 exotic animals that were going to be sold as pets. A week later, police had **arrested 4 people who were involved** in the plan.

Indonesian police arrested a person who had 150 exotic animals and planned to sell them as pets. **Later on,** 4 more people were arrested who helped out the original person.
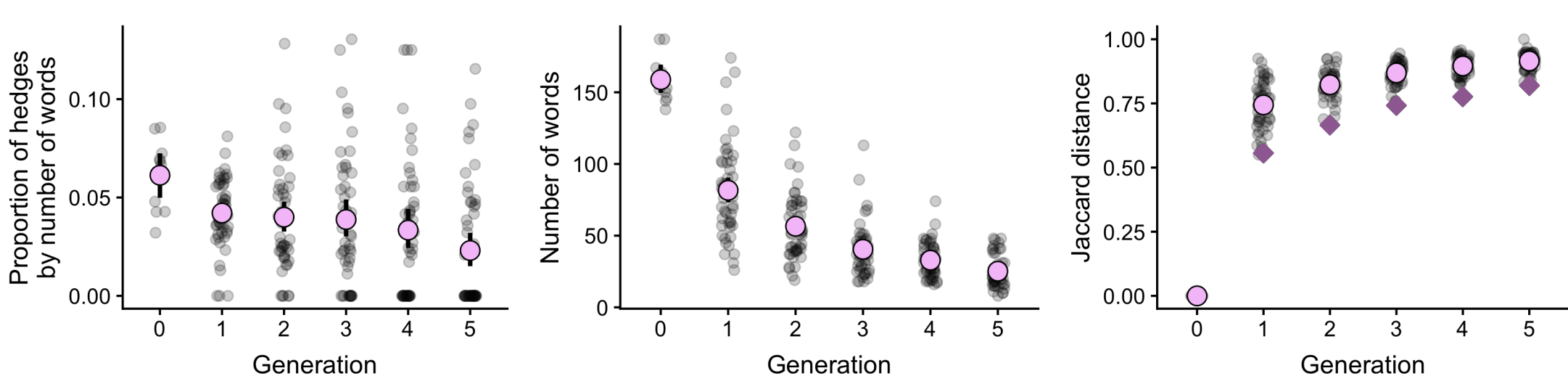
Corpus

Transmission chain paradigm: Bartlett 1932[1]

5 seeds x *2 conditions*

| story 1 *weak evidence* | story 1 *strong evidence* | ... | story 5 *strong evidence* |

5 chains

5 generations

250 reproductions

Seed stories

- The seed stories reported on a committed crime and an arrest of one or more suspects.
- Each seed occured in a **weak and strong evidence condition**, for example suggesting blurry or clear video footage used for identification of the suspects.[2]
- **Topics**: arson, property destruction, sexual harrassment, email scam, animal smuggling


Annotation

- The corpus elicited reproductions, whereas the annotations address the reader's guilt perception directly.
- 5392 participants (Amazon Mechanical Turk) answered 8 questions (5 guilt-related, 3 other) about one story from the corpus.

Condition   strong evidence   weak evidence
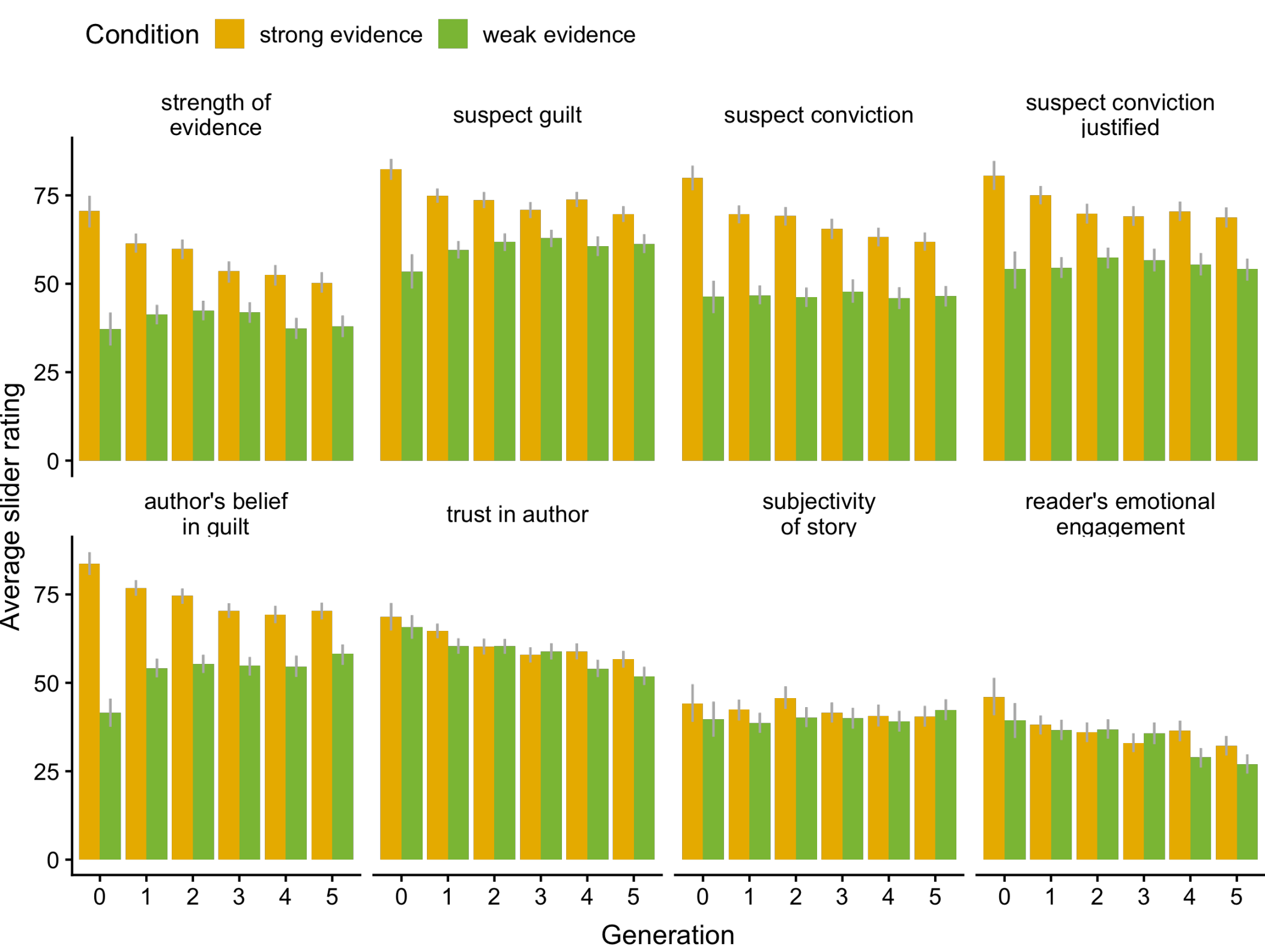
- All guilt related measures show a clear evidence condition effect.

Results

- Asymmetry between what readers themselves believe about the suspect's guilt and what they think the author of the story believes.
- However, this asymmetry only exists when the evidence is weak and the proportion of hedges and number of words is high and Jaccard distance to the original story is low.

Question   author's belief in guilt   suspect guilt   Evidence   strong   weak
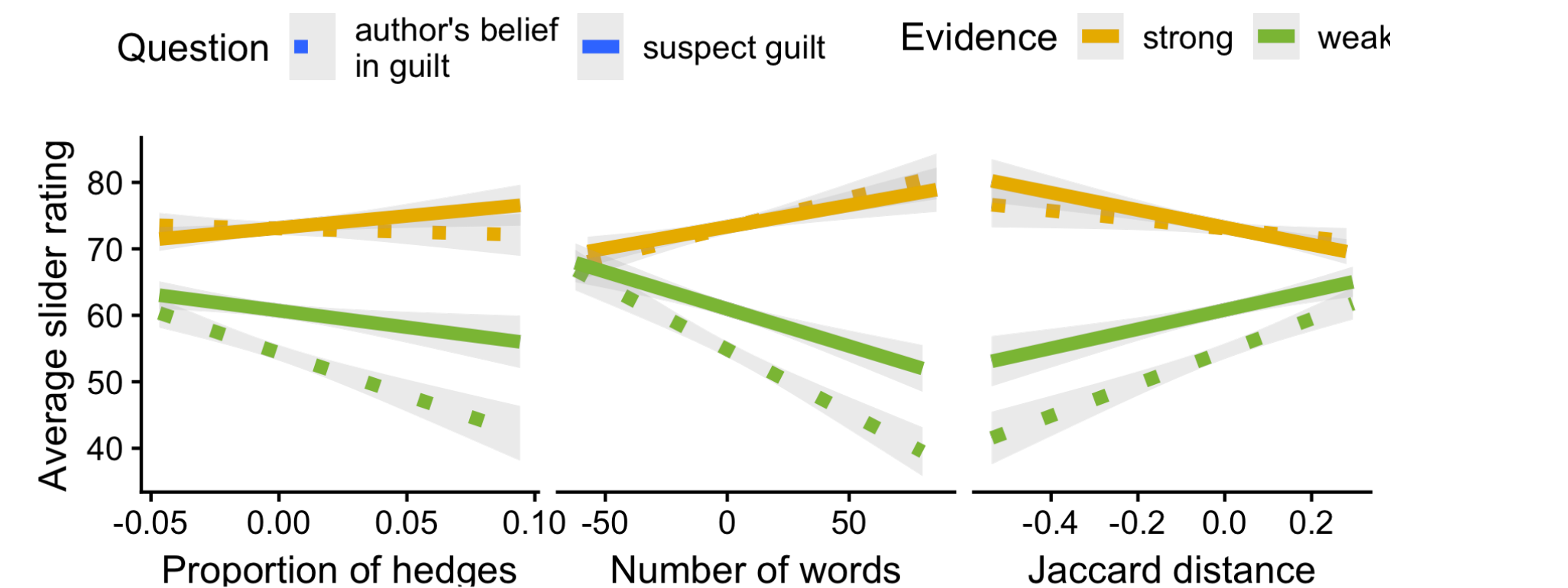
We observed significant interactions between evidence strength condition and generation-residualized linguistic feature for all linguistic features except proportion of hedges on the suspect guilt measure and for all three linguistic features on the attributed suspect guilt measure

Discussion

- When the evidence is weak, participants judge the suspect's guilt higher than what they think the author of the story believes. This in turn could guide people's reproductions and influence how stories transform.

References
[1] Bartlett, F. C. (1932). Remembering: An experimental and social study. *Cambridge: Cambridge University.*
[2] Van Prooijen, J.-W. (2006). Retributive reactions to suspected offenders: The importance of social categorizations and guilt probability. *Personality and Social Psychology Bulletin, 32*(6), 715–726.
Related: [3] Kirby, S., Griffith, T., & Smith, K. (2014). Iterated learning and the evolution of language. *Current Opinion in Neurobiology, 28,* 108–114. [4] Degen, J., Trotzke, A., Scontras, G., Wittenberg, E., & Goodman, N. D. (2019). Definitely, maybe: A new experimental paradigm for investigating the pragmatics of evidential devices across languages. *Journal of Pragmatics, 140,* 33– 48. [5] Mesoudi, A., & Whiten, A. (2004). The hierarchical transformation of event knowledge in human cultural transmission. *Journal of Cognition and Culture, 4*(1), 1–24.