

Editors preserve complexity in language

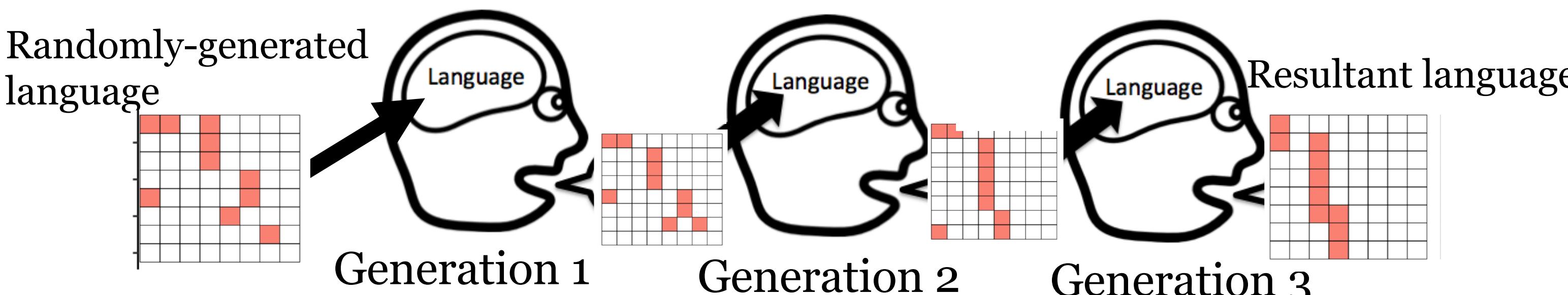
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Background

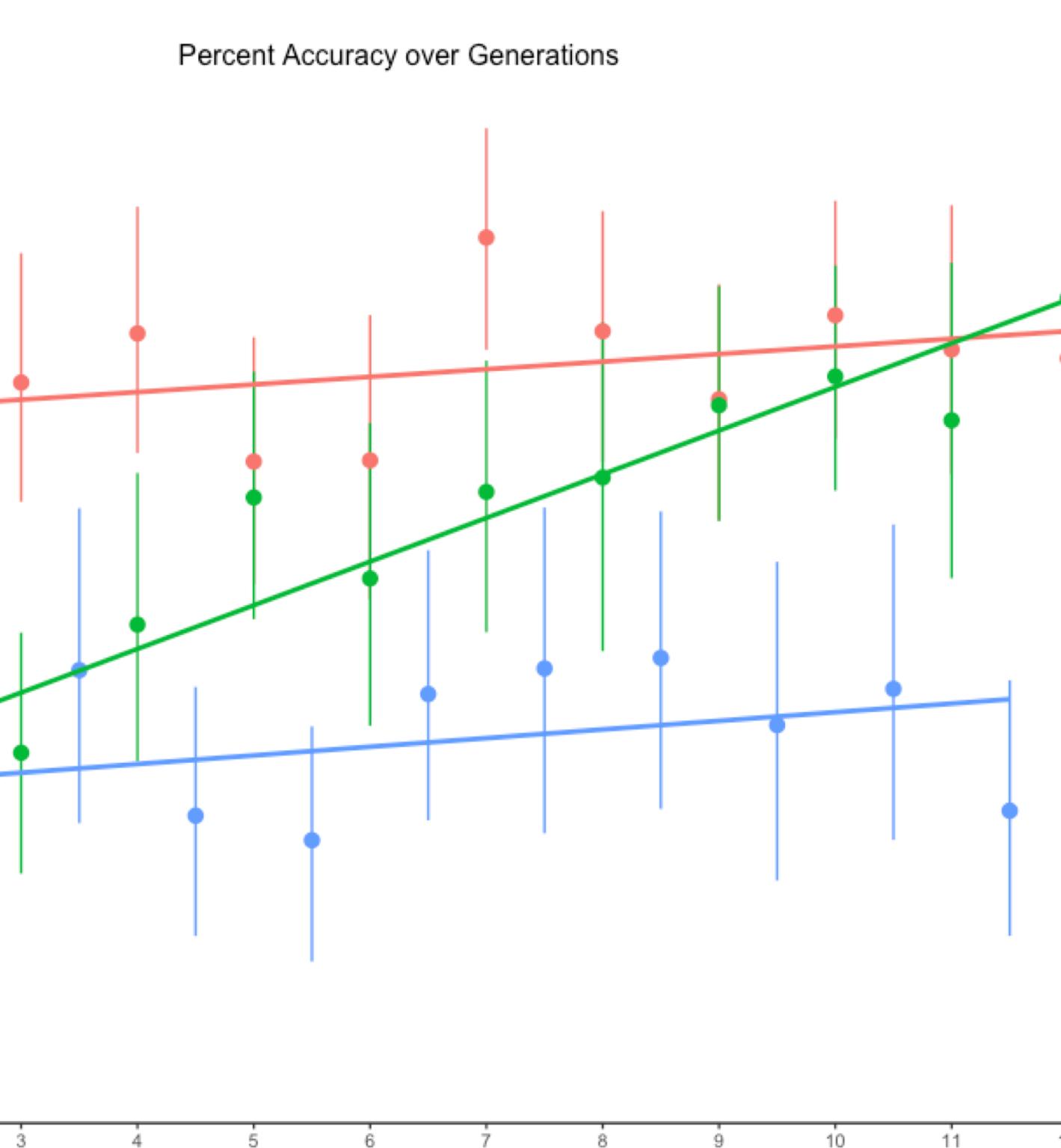
- Why do languages change and evolve, aside from acquiring new vocabulary?
- 1. **Transmissibility** pressure: the language needs to be **learnable**, and therefore **simple**.
- 2. **Descriptiveness** pressure: the language needs to be **useful**, and therefore **more complex**.
- Early language learners have potentially greater pressures towards **transmissibility** – what keeps **descriptiveness** around?
- Language learning is an active, social process: involving feedback from those who are more knowledgeable in the language (e.g. teachers).
- We predict that the influence of teachers through correction is a mechanism by which descriptiveness is retained in language systems.

Diffusion Chain Paradigm

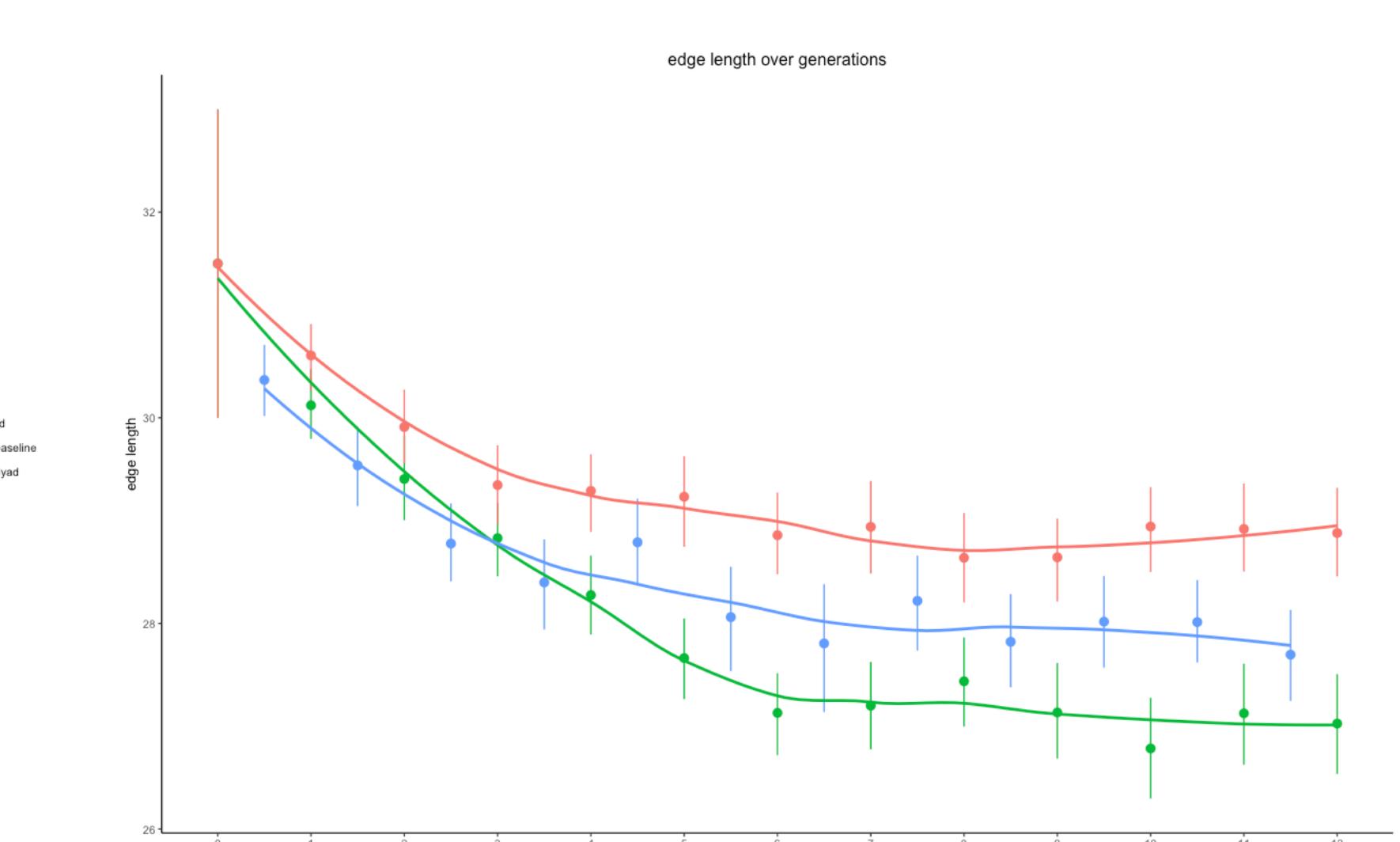
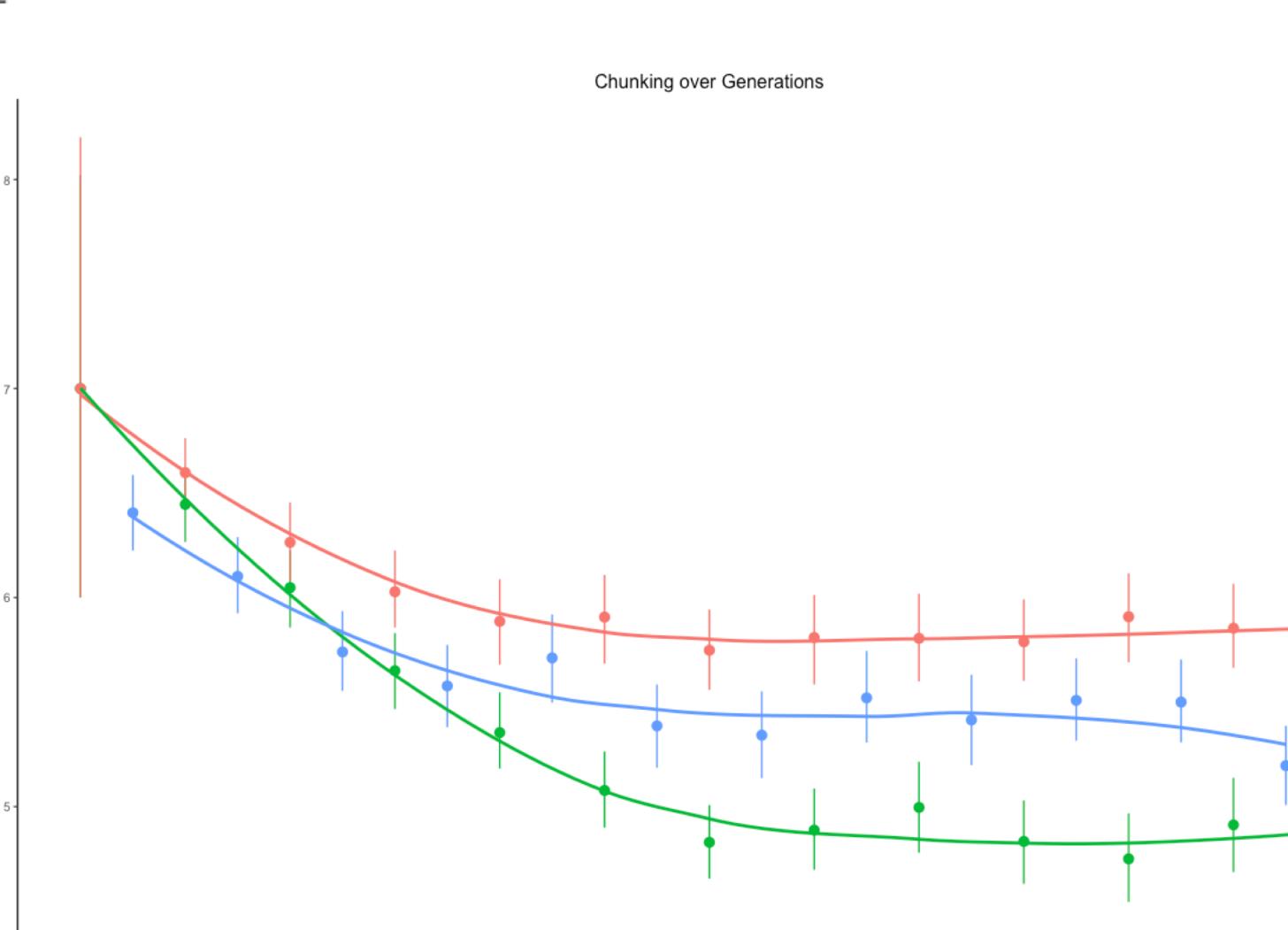
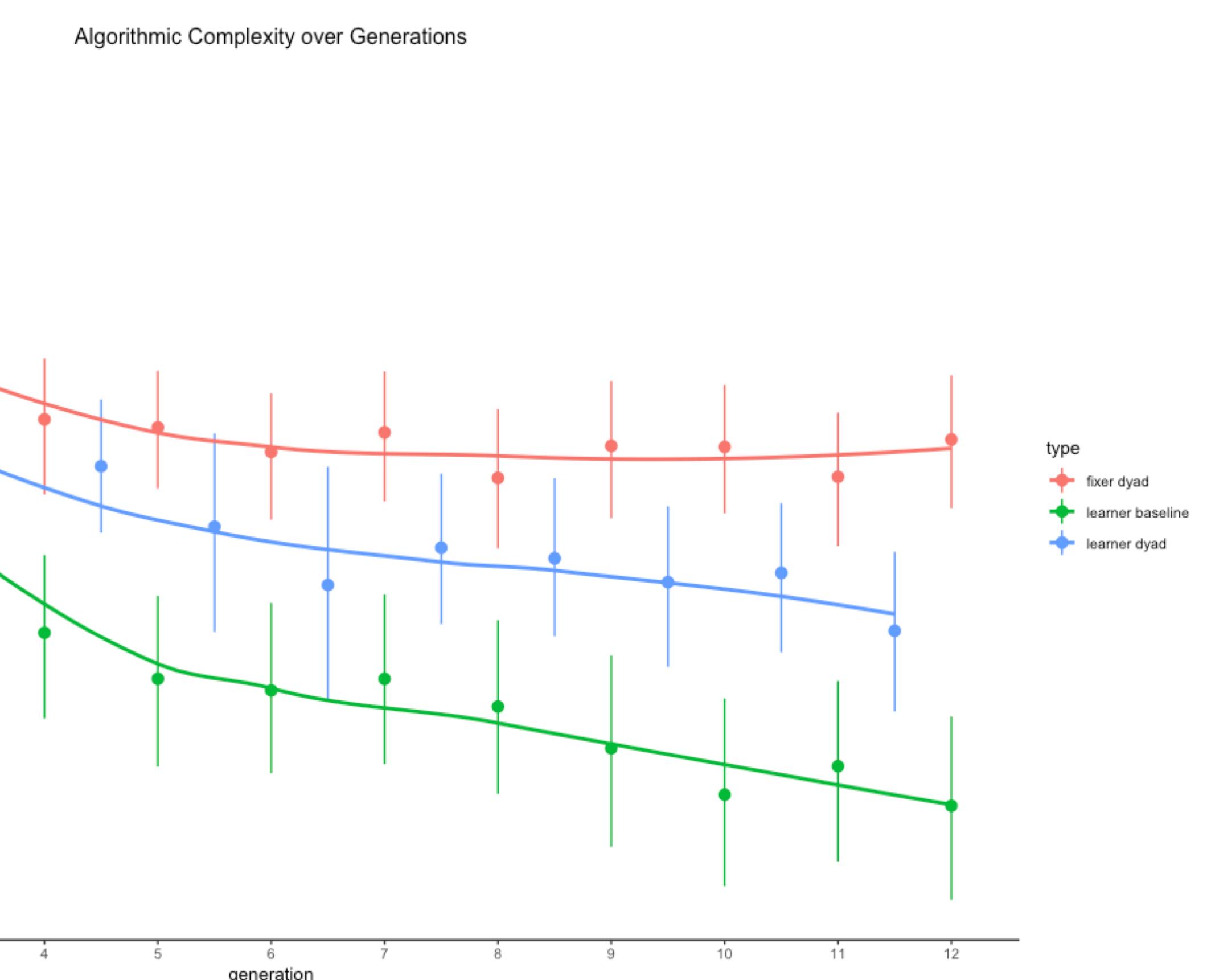
1. Learner Baseline Condition



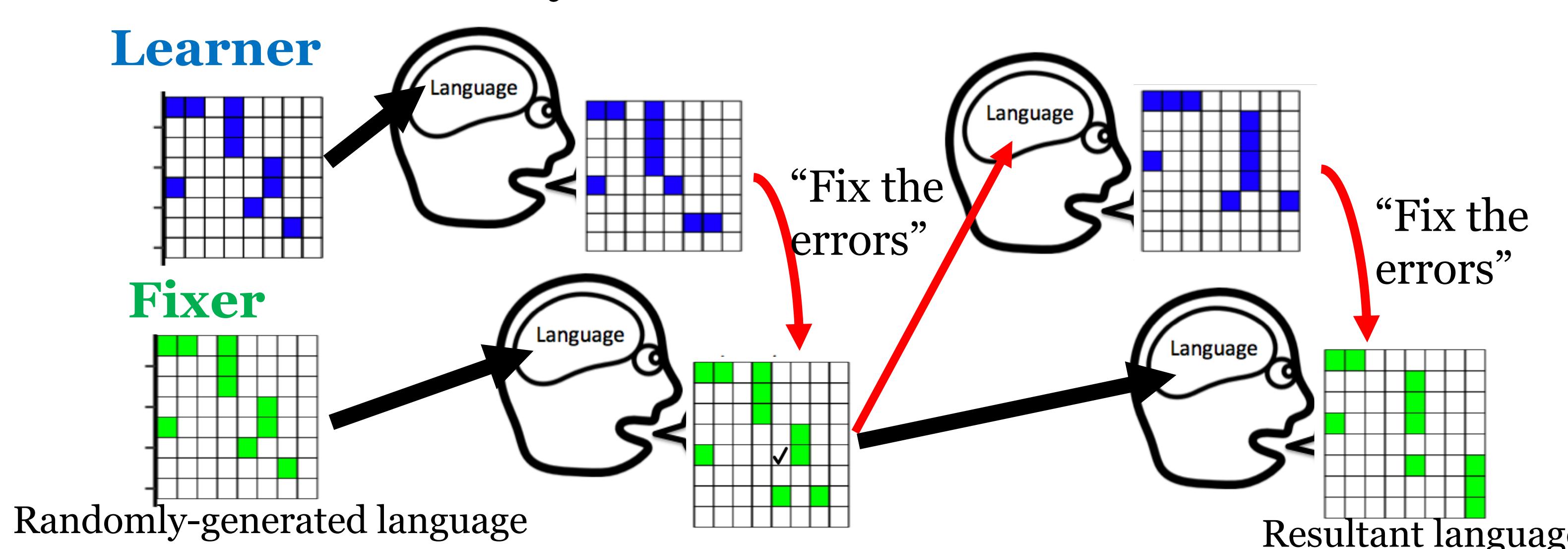
The addition of a corrective element in a novel language-learning task allows a higher degree of complexity to be retained while retaining a consistent level of percent accuracy.



Results

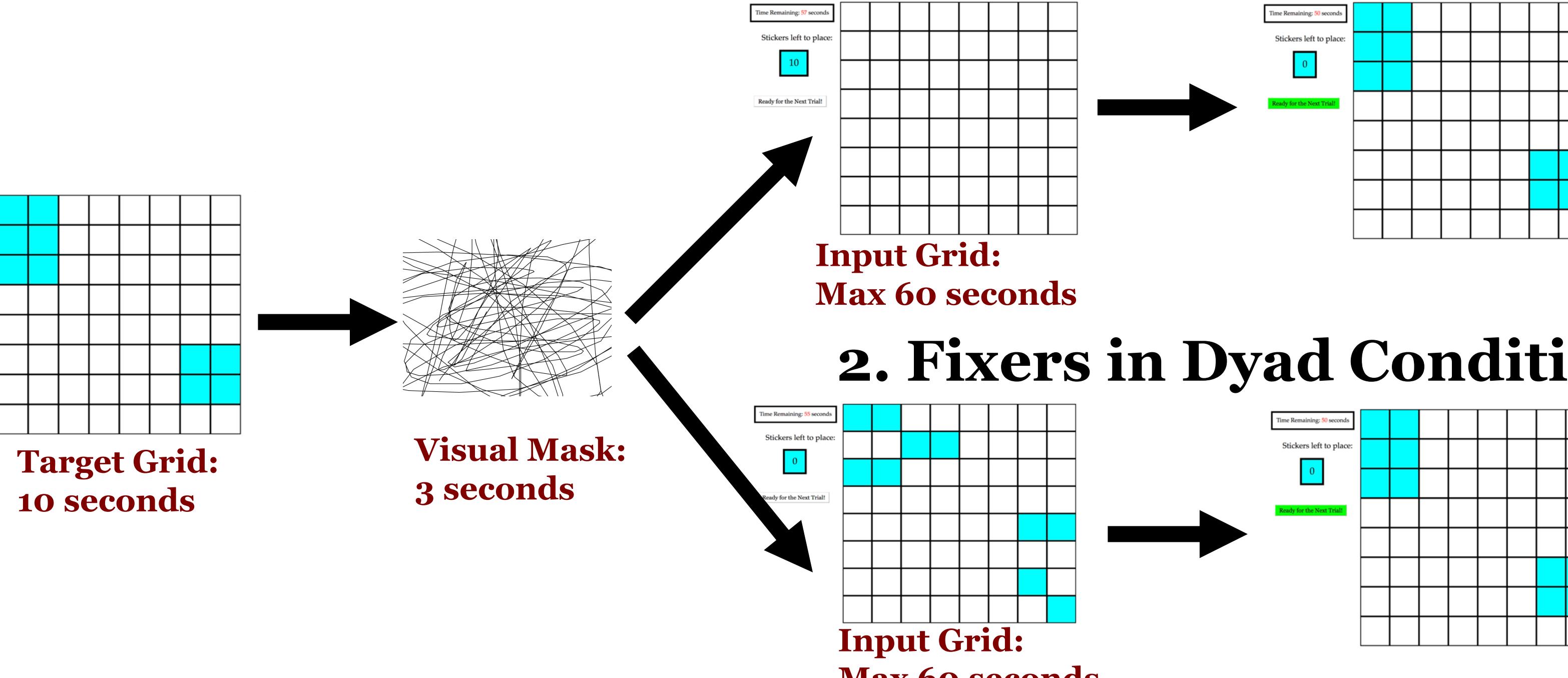


2. Learner-Fixer Dyad Condition



Method

1. Learner Baseline Condition & Learners in Dyad Condition



Adult Baseline Condition:

- Replication:
- 480 U.S. adults on Amazon Mechanical Turk
 - 40 chains of 12 generations each

Learner-Fixer Dyad Condition:

- Replication:
- 960 U.S. adults on Amazon Mechanical Turk
 - 40 chains of 12 generations each

Conclusions & Future Work

- Adding a corrective element into the language learning process—like feedback from a teacher—allows a higher degree of descriptiveness to be retained in language
- Vertical language transmission may be the mechanism by which languages are protected from degeneration
- Three measures of pattern complexity had strikingly similar results
- Results replicated original work by Kempe et al. (2015)
- Data collection is ongoing with children ages 6-8 at the Museum of Science and Industry in Child Baseline and Child-Adult Dyad conditions to investigate how child and adult learners may differentially change an evolving language, as children and adults may possess different pressures affecting the language-learning process