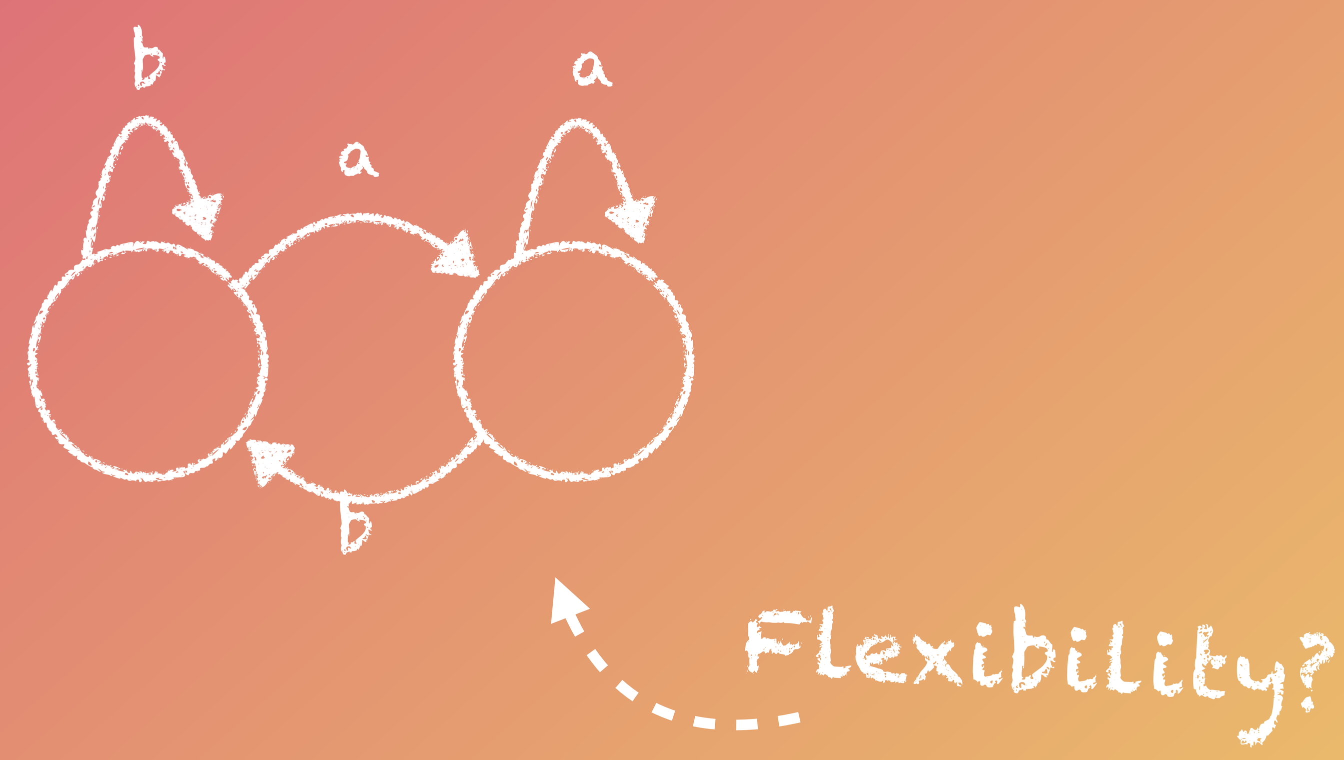
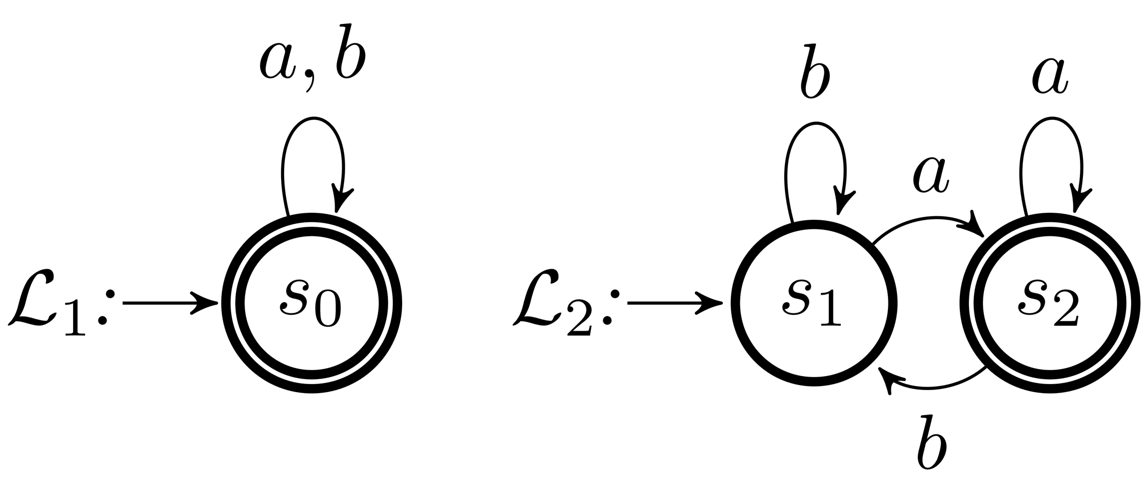
On the Flexibility of
Declarative Process Specifications

We investigate how algorithmic techniques introduced to measure the distance of regular languages can be suitably employed to measure the flexibility of infinite regular behaviors.



// FLEXIBILITY

- The behaviors allowed by declarative process specifications may be more or less **flexible**, depending on how much freedom they provide.



- Intuitively, with flexibility we intend to describe the **degree of freedom** of choices that can be taken when executing the process. In this sense, L_1 is more flexible than L_2
- This provides valuable insights into declarative process specifications, e.g., *"how 'strict' is the specification?"*

// A BASELINE MEASURE OF FLEXIBILITY

Definition. *The flexibility flex(**L**) of a regular language **L** is defined via*

$$\mathit{flex}(\mathcal{L}) = \lim_{n \to \infty} \frac{W_{\leq n}(\mathcal{L})}{W_{\leq n}(\Sigma^*)}$$

- Intuitively, flex(L_1) = **1**, and flex(L_2) = **0.5**
- We show how the concrete flexibility value can be computed based on Jaccard-like notions of language **distances**

- As an outlook, there are still technical obstacles to overcome, which we are currently extending on in this project. Mainly:
  - Computing the asymptotic growths of languages
  - Showing situations where the limit exists
  - Having situations where a comparison of languages of different „entropy" is too coarse-grained

// APPLICATIONS

- **Analysis** of declarative process specifications
- Ranking choices in agent strategies/**planning**
- Estimating Likelihood of **Monitoring** States (RV-LTL)

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