Jeroen's model

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1 Notation

- Σ: ordered list of symbols (types).
- $\mathcal{B} = (b_1, \ldots, b_N)$: set of bricks.
- $\mathcal{A} = (a_1, \ldots, a_M)$: set of active bricks.
- $\mathcal{A} \subseteq \mathcal{B}$.
- $\mathcal{P}$: pose space.
- $\mathcal{P}_b$: pose cell of brick b- a set of poses
- t_b: type of brick b.
- $\mathcal{R}$: set of production rules of the form $A \rightarrow B_1, \ldots, B_k$ with $A, B_1, \ldots, B_k \in \Sigma$.
- n_r: number of slots/children associated with rule $r \in \mathcal{R}$
- $p_{r,n}(x_i|x)$, $r \in \mathcal{R}$, $x, x_i \in \mathcal{P}$, $n \in [1...n_r]$: conditional probability density over pose for B_i given pose for A for this rule and slot.
- $\mathcal{R}$ is acyclic.
- $\mathcal{R}(A)$: rules with A in the left-hand-side (LHS).
- p_A: distribution over $\mathcal{R}(A)$.
- $s_b \in \{0, 1\}$: on/off state of brick b.

- $r_b \in \mathcal{R}(t_b)$: rule used by brick b.
- V_t: set of symbols listed before symbol $t \in Sigma$ in the ordered list of symbols.
- W_t: set of symbols listed after symbol $t \in Sigma$ in the ordered list of symbols.
- $x_b \in \mathcal{P}_b$: pose for brick b