

EXAMPLES

① FULL SHIFTS X_n

$$\mathcal{a} = \{1, \dots, n\}$$

$$W = \emptyset$$

f.p.? ALWAYS

② S-GAP SHIFTS X_S

Given $S \subseteq \mathbb{N}$. Take

$$\mathcal{a} = \{0, 1\}$$

$$W = \{ \overbrace{10 \dots 0}^n 1 \mid n \notin S \}$$

f.p.? WHEN S IS
EVENTUALLY PERIODIC

③ SUBSTITUTIONAL SHIFTS X_{τ}

Fix \mathcal{a} and $\tau: \mathcal{a} \rightarrow \text{Words in } \mathcal{a}$

Define

$$W = \{ w \mid w \text{ is never a subword} \\ \text{of } \tau^n(a) \}$$

f.p.? ALWAYS

④ RENEWAL SYSTEMS $X_{\{w_1, \dots, w_n\}}$

Fix \mathcal{O} and a list w_1, \dots, w_n from $\mathcal{O}^+ \setminus \{\epsilon\}$. Set

$$W = \left\{ w \mid w \text{ not a subword of } w_{i_1} \dots w_{i_n} \right\}$$

Universe (not to scale!)

