Variable name	Description	Variable type	Category
Hindlimb	Piezo sensor below the animal	Analog + Event kernel	Movement
Handles (Left / Right)	Touch events from handle sensors	Event kernel	Movement
Licks (Left / Right)	Lick events from spout sensors	Event kernel	Movement
Pupil	Pupil diameter, extracted from face camera	Analog + Event kernel	Movement
Nose	Nose movements, extracted from face camera	Analog + Event kernel	Movement
Whisking	Whisker movements, extracted from face camera	Analog + Event kernel	Movement
Body	Average motion energy across all body camera pixels	Analog + Event kernel	Movement
Video	Video dimensions from both cameras (SVD)	Analog	Movement
Video ME	Video dimensions from motion energy in both cameras	Analog	Movement
Time	All trials	Event kernel	Task
Choice	All leftward choice trials	Event kernel	Task
Previous choice	Every trial after a leftward choice trial	Event kernel	Task
Previous modality	Every trial after a visual trial	Event kernel	Task
Previous success	Every trial after a successful trial	Event kernel	Task
Success	All successful trials	Event kernel	Task
Water given	All frames after a reward was given	Event kernel	Task
Audio (Left / Right)	All frames after a left- or rightward auditory stimulus	Event kernel	Task
Vision (Left / Right)	All frames after a left- or rightward visual stimulus	Event kernel	Task

Supplementary Table 1. Model variable overview.

Overview of all variables that were used in the linear model.