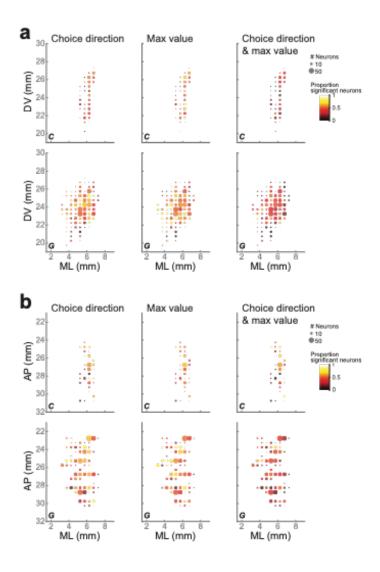
## Supplemental Materials for Fast and slow contributions to decision making in corticostriatal circuits

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Neuron

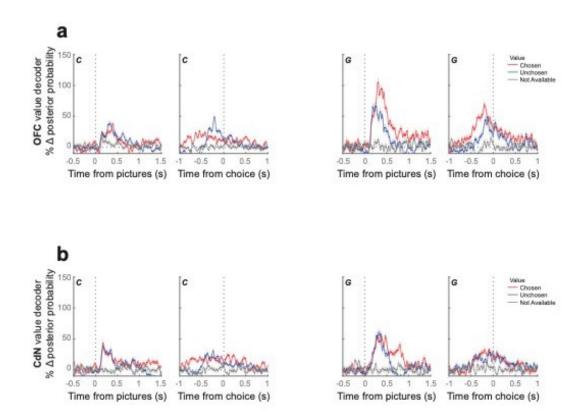
**Supplementary Figure 1.** Anatomical distribution of CdN neuron encoding.

**Supplementary Figure 2.** Value decoding after picture onset and around choice.



Supplementary Figure 1. Related to Figure 2. Anatomical distribution of CdN neuron encoding.

We investigated the anatomical distribution of CdN neurons that were significantly predicted by choice direction, maximum value, or both during the first 500 ms after picture onset (Fig. 2b). For each group, we built a logistic regression for the proportion of significant neurons, predicted by the three anatomical axes (ML, AP, DV). We did not find significant organization along any gradient (subjects C and G: p > 0.1 for all models). (a) For visualization, we projected the recording sites in the ML-DV plane; we pooled across hemispheres for subject G. The circle size reflects the number of neurons. In each panel column, the circle color indicates the proportion of neurons significantly predicted by that task variable. (b) We projected the recording sites in the ML-AP plane. Same conventions as (a).



Supplementary Figure 2. Related to Figures 6 and 7. Value decoding after picture onset and around choice.

We aimed to compare the relative strength of decoding chosen and unchosen values following picture onset and around the time of choice for both regions. We restricted this analysis to the slowest 25% of correct trials to maximally separate any phasic response following picture presentation to neural responses related to the preparation of the choice response. (a) Mean  $\pm$  s.e.m. decoding strength from OFC. The difference between chosen and unchosen value strength around the time of choice was inconsistent between subjects. (b) Mean  $\pm$  s.e.m. decoding strength from CdN. There was no difference between chosen and unchosen value strength around the time of choice.