

Neural Basis of the Macaque Social Repertoire

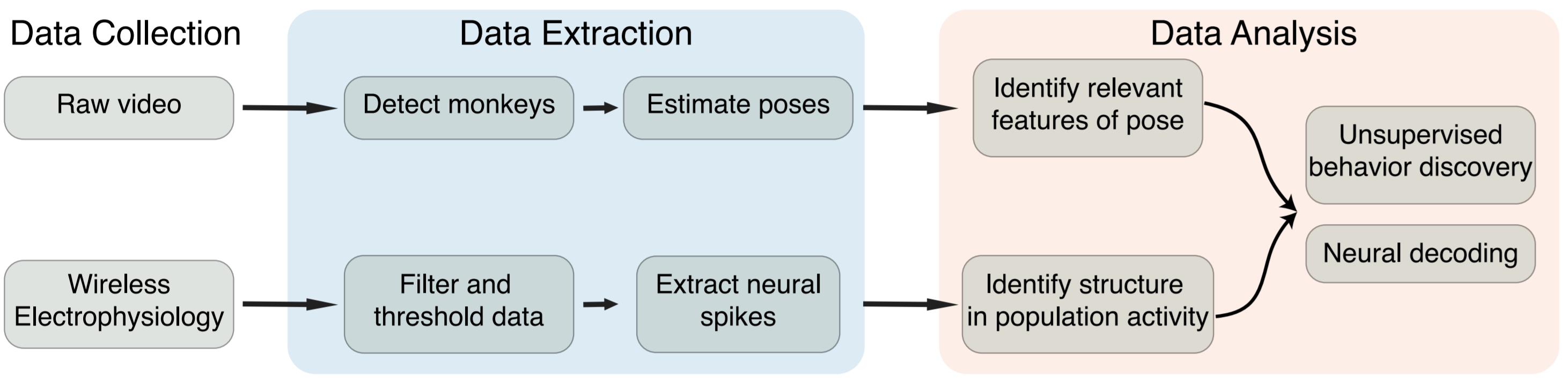
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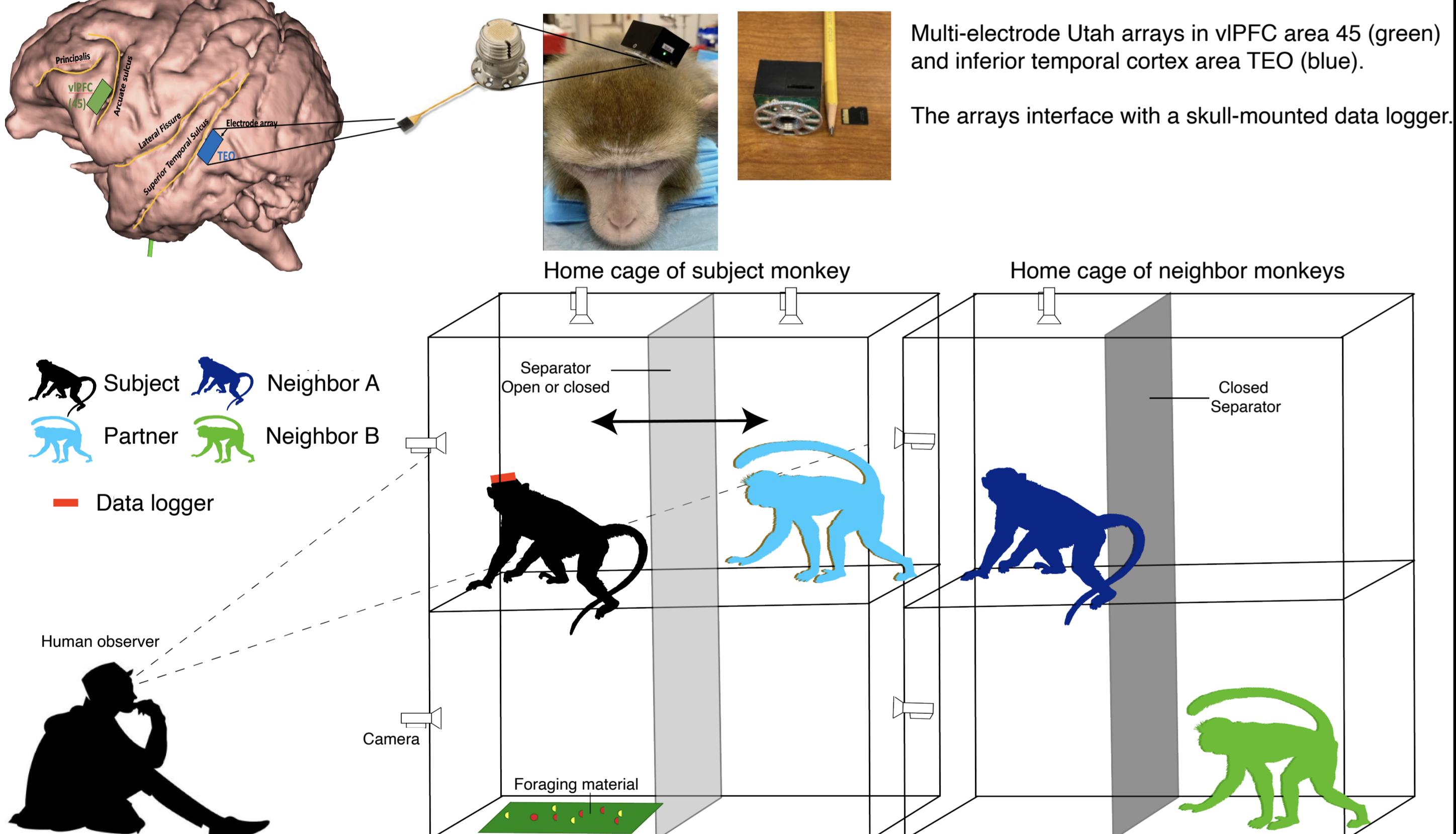
INTRODUCTION

1. Neurophysiology has historically focused on constrained animal experiments, limiting our knowledge of neural processes underlying natural behaviors.
 2. Here, we combine wireless neurophysiology and computer vision to study neural activity in regions TEO and vIPFC in 2 freely behaving macaques.

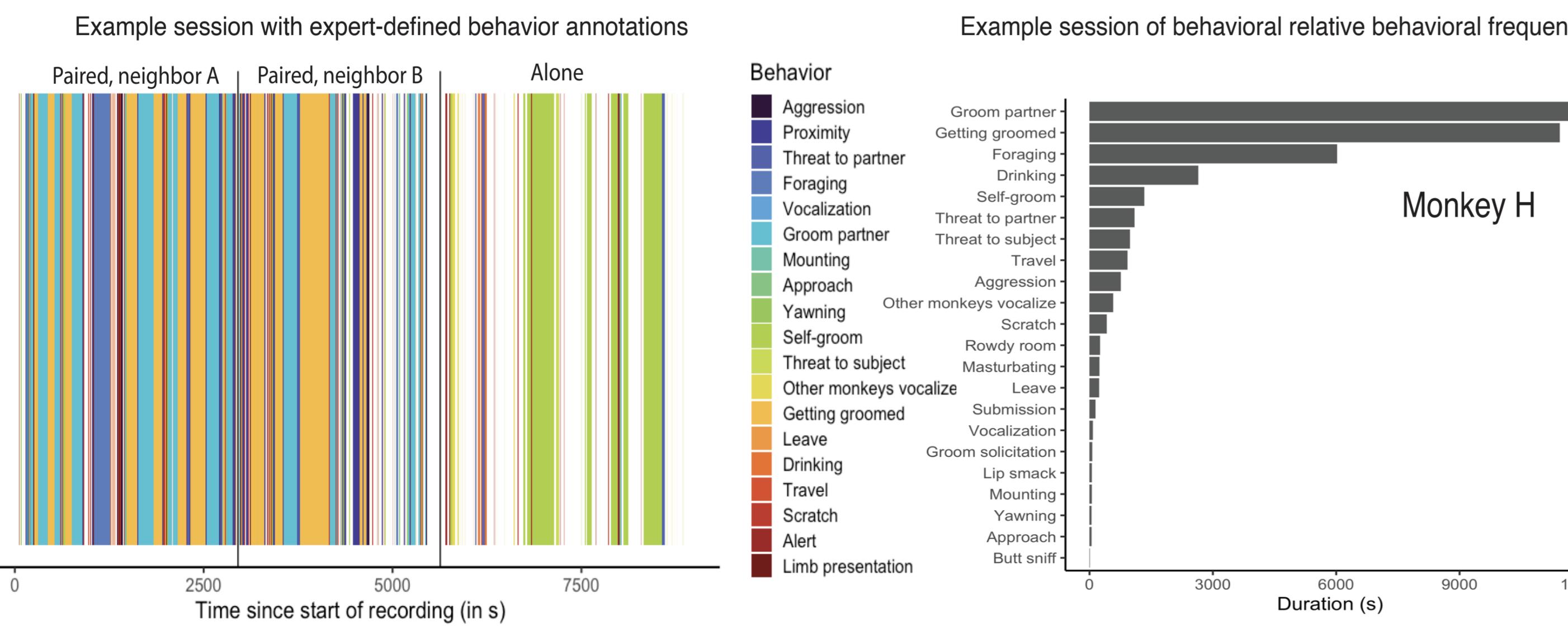
APPROACH



Neurobehavioral recordings in freely moving conditions

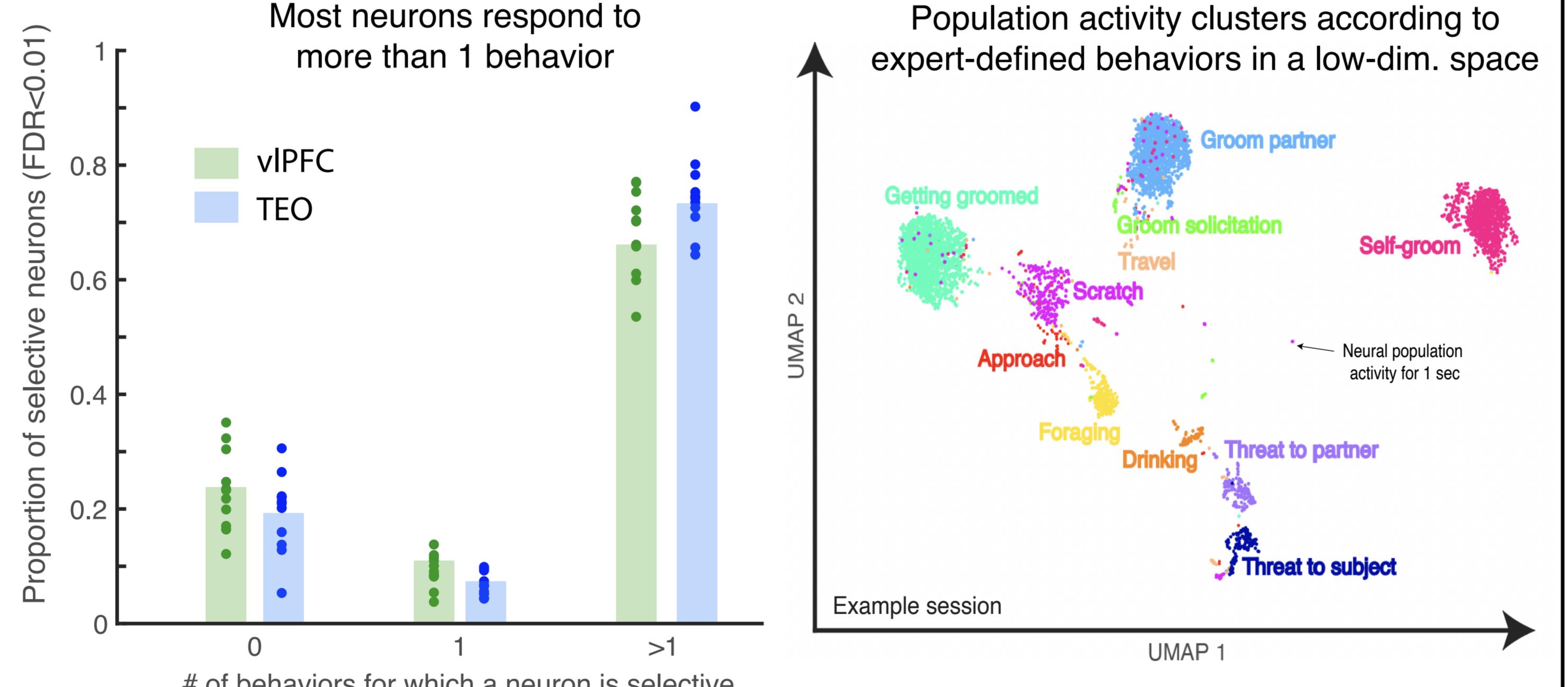
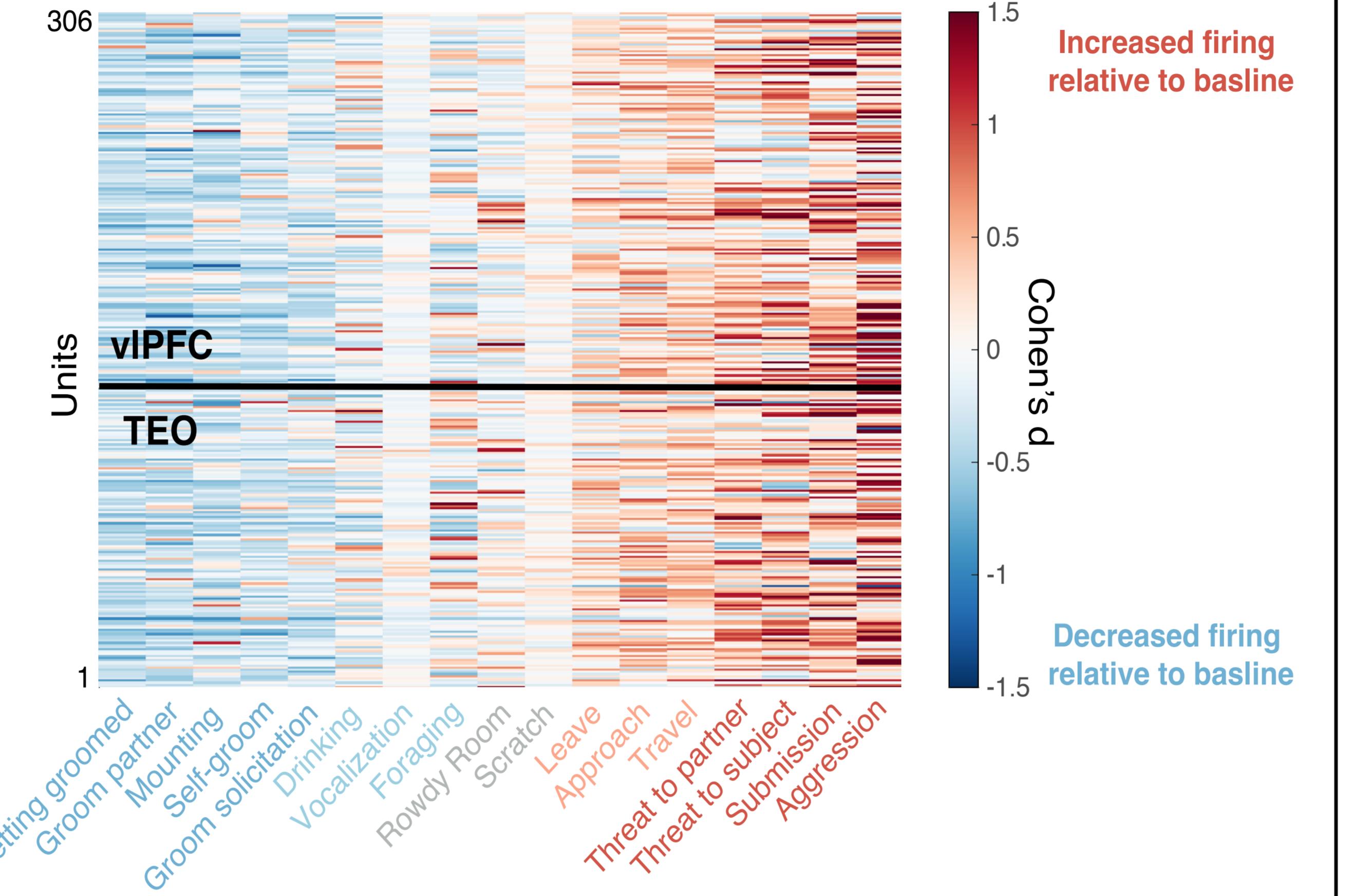


Macaques express diverse behaviors in natural contexts

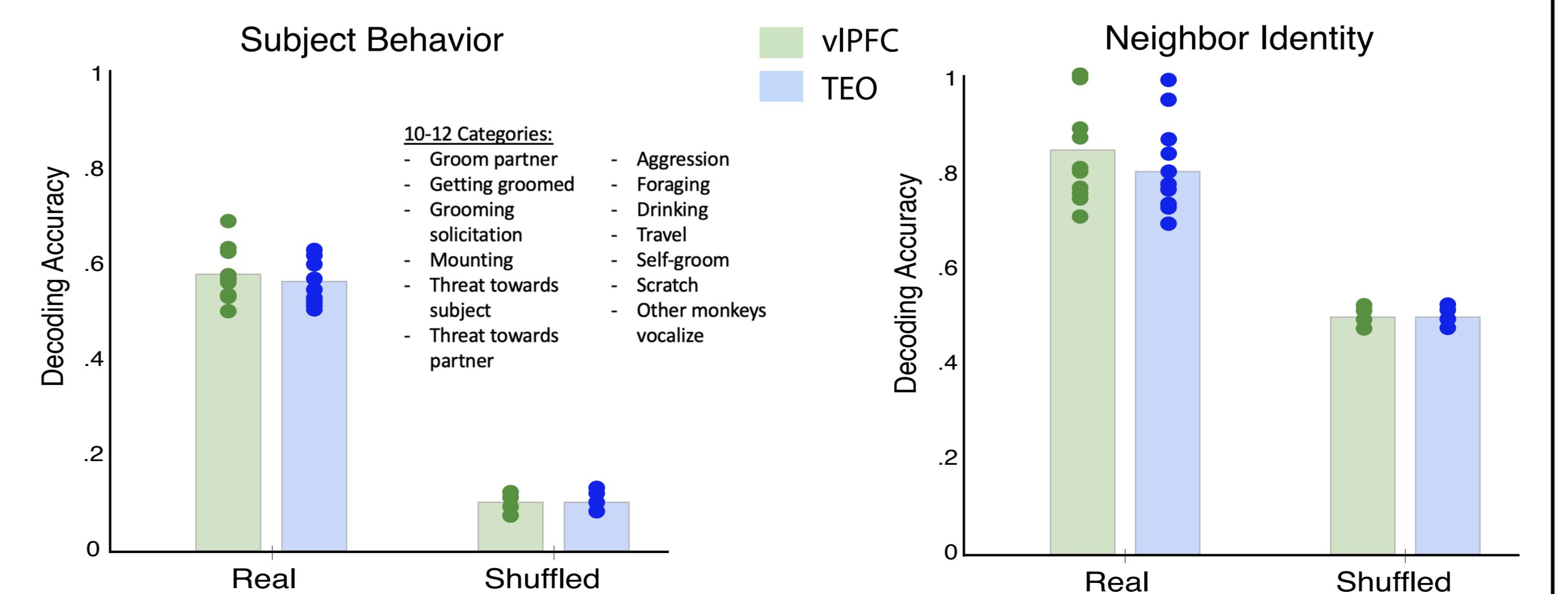


Neural populations in TEO, vIPFC encode rich, natural behaviors

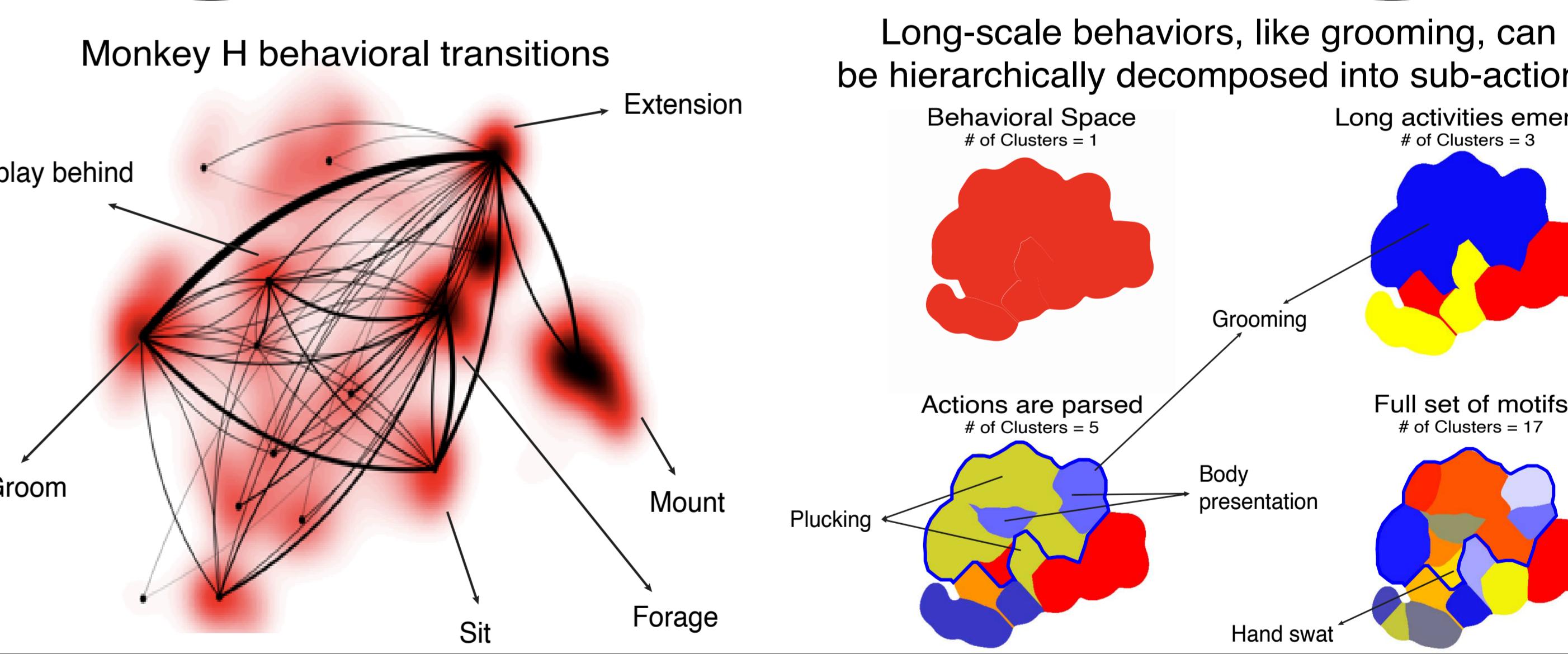
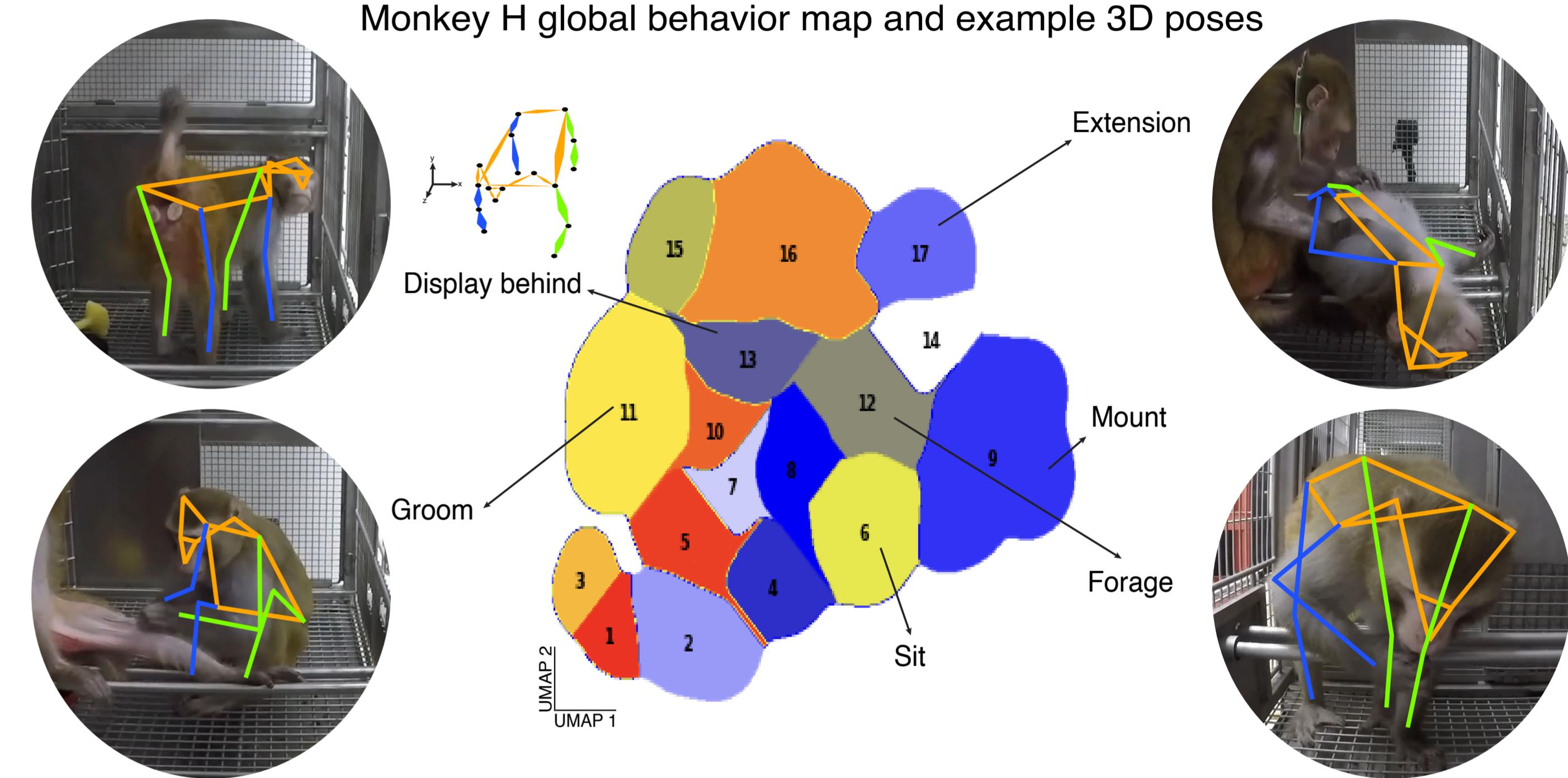
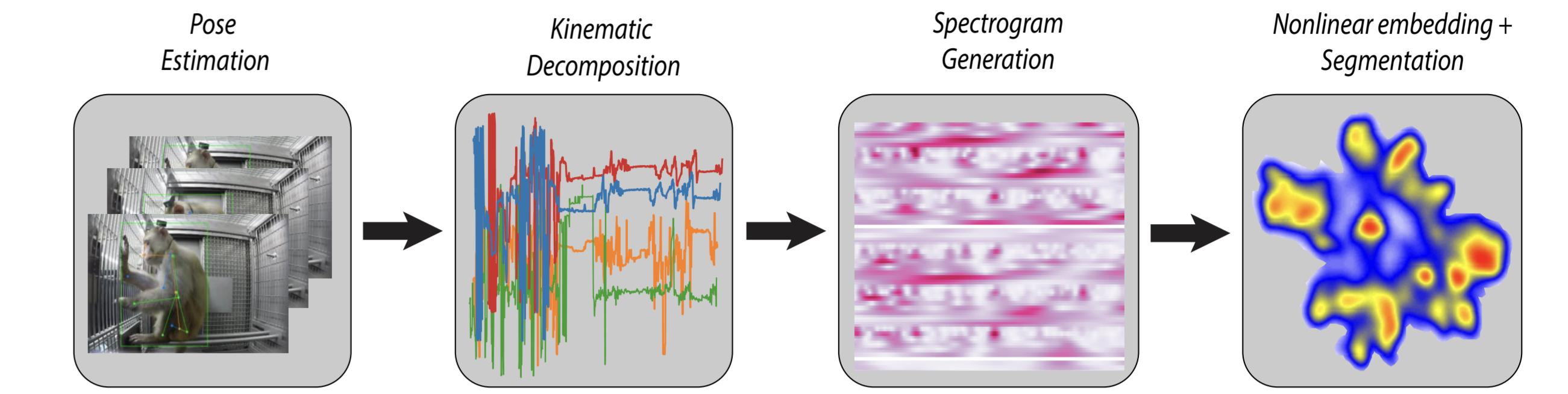
Affiliative behaviors correlate with a relatively low firing rate; agonistic behaviors correlate with an increased firing rate.



We can decode subject behaviors and social context



We can discover natural actions via unsupervised learning



CONCLUSIONS

1. We recorded neural activity from freely socializing macaques.
 2. Affiliative behaviors correlate with a decreased relative neural firing rate while agonistic behaviors correlate with an increased firing rate.
 3. Neural population activity encodes behavior and situational context.
 4. Using deep learning-based computer vision, we discovered natural movements, their transitions, and their hierarchical organization.

Thanks for stopping by!

This work was supported by the NIH (R37MH109728) and the NRSA 32 NIDCD-NIH Training Grant in Audition and Communication (CANAC).

ested in naturalistic neuroscience and behavior quantification? Join us!
Feline Parodi *Platt Labs* *Kording Lab*

The image displays three distinct QR codes arranged horizontally. Each QR code is associated with a specific research group: 'Felipe Parodi' (top left), 'Platt Labs' (top center), and 'Kording Lab' (top right). The QR codes are black and white, with varying patterns.

Panel 1 figures; CT, ST, FP; Panel 2 figures; CT; Panel 3 figures; FP