



Comparison within Macaque vmPFC: Area 32 vs. 14

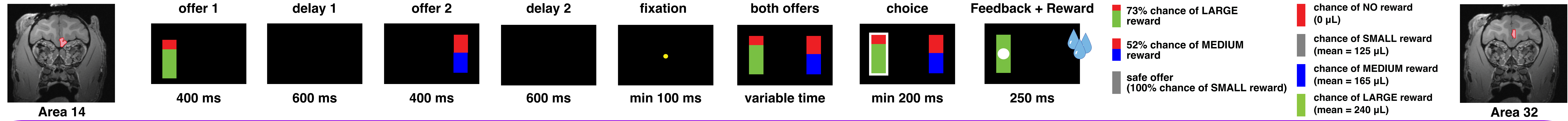
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HAYDEN LAB
The Neural Basis of Choice

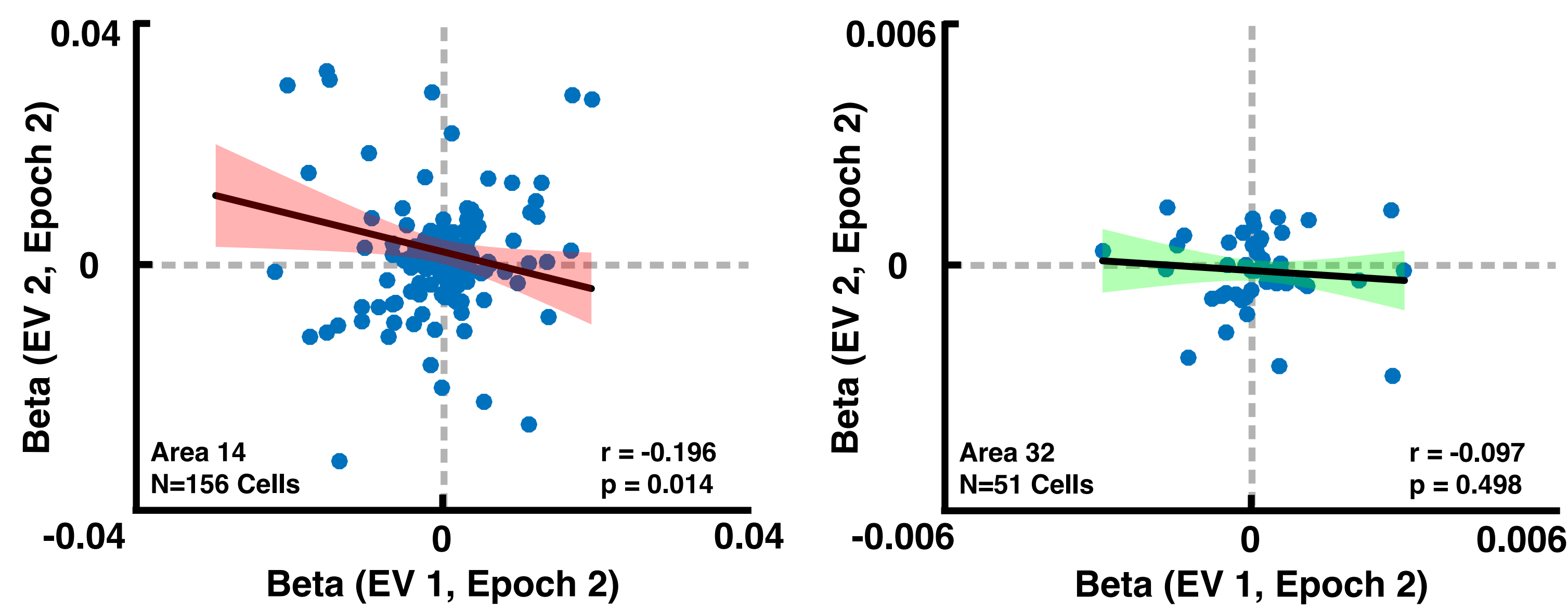
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Introduction and Methods



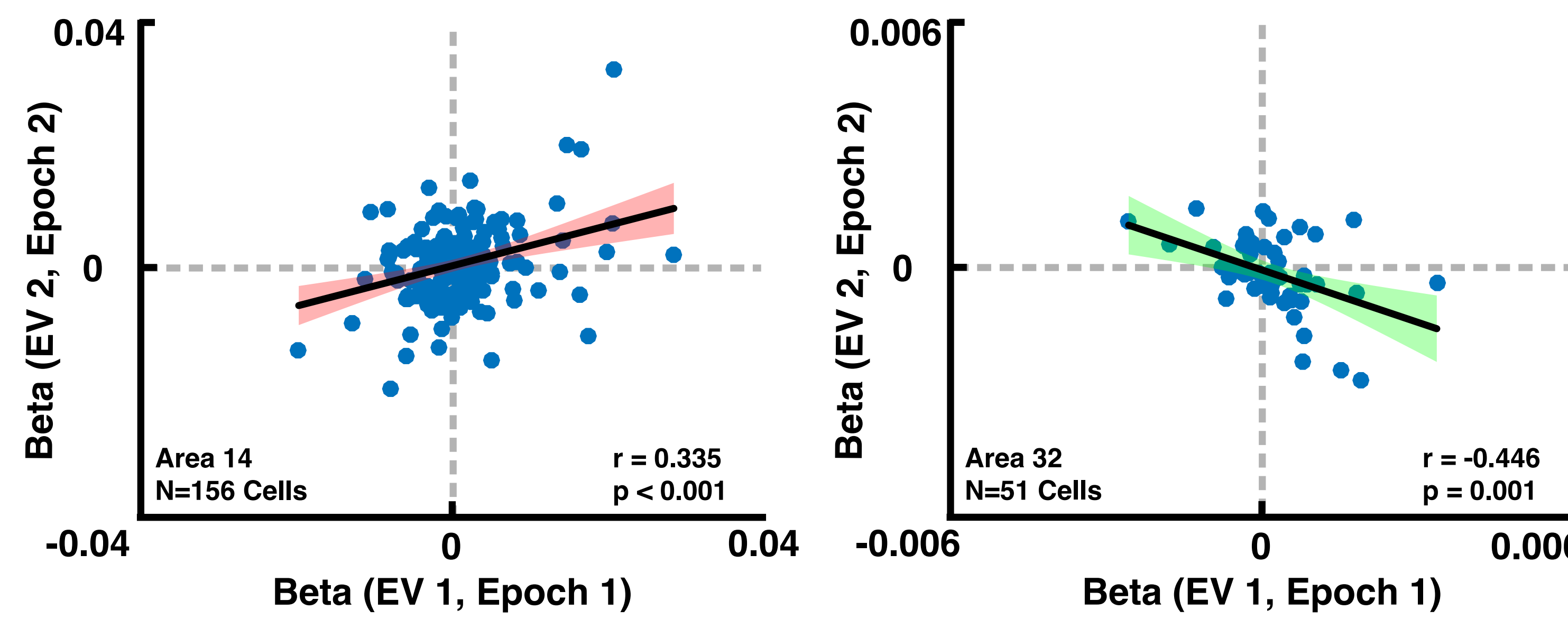
Mutual Inhibition

During the offer 2 epoch, encoding of offer 1 and offer 2 value adopted opposing formats (tuning strength and direction) in Area 14 but not in Area 32, suggesting mutual inhibition signal in only Area 14 but not 32.



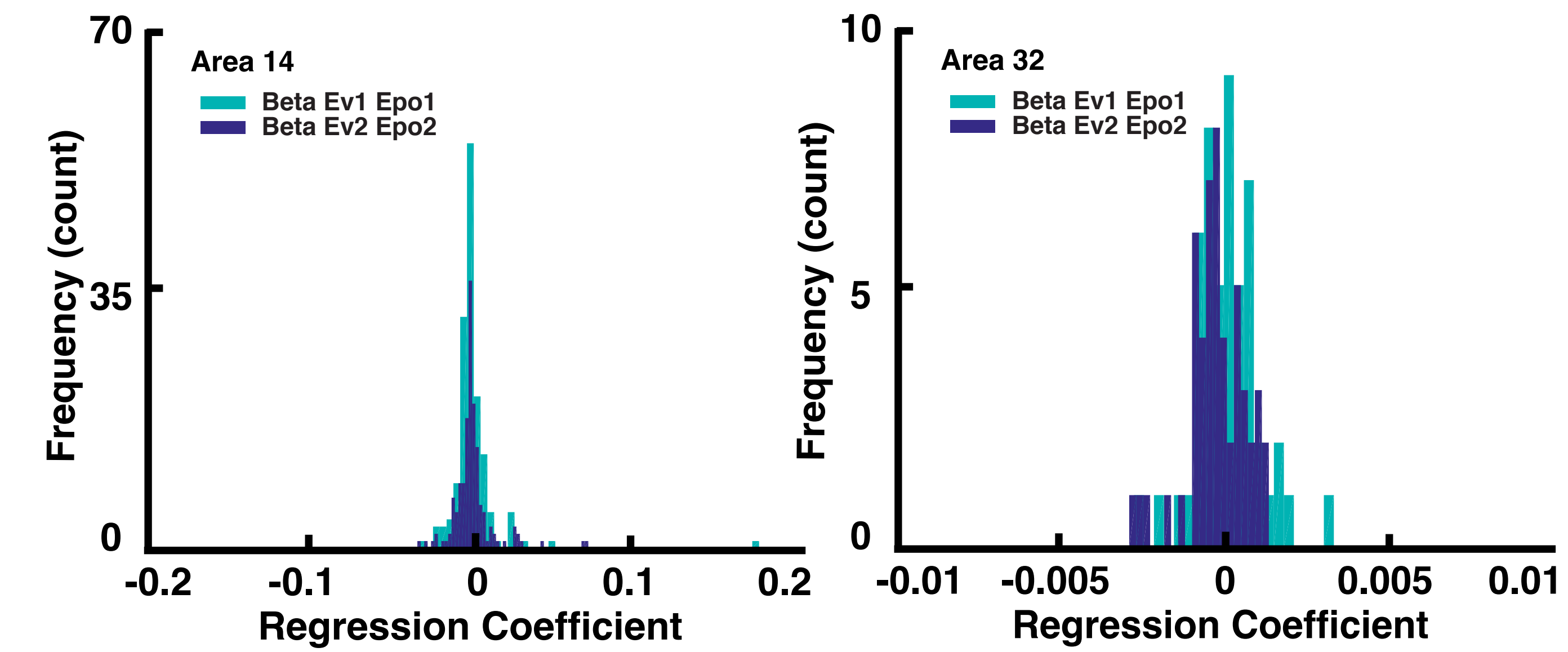
The difference in the strength of the correlations from 14 vs. 32 is not significant
Z-value = -0.61, P-value = 0.541 (two-sided Fisher's Transformation).

Encoding of offer 1 in offer 1 epoch and encoding of offer 2 in offer 2 epoch adopted the same format in Area 14 but opposing formats in Area 32, suggesting mutual inhibition signal in only Area 14 but not 32.



The difference in the strength of the correlations from 14 vs. 32 is significant
Z-value = 5.01, P-value < 0.001 (two-sided Fisher's Transformation).

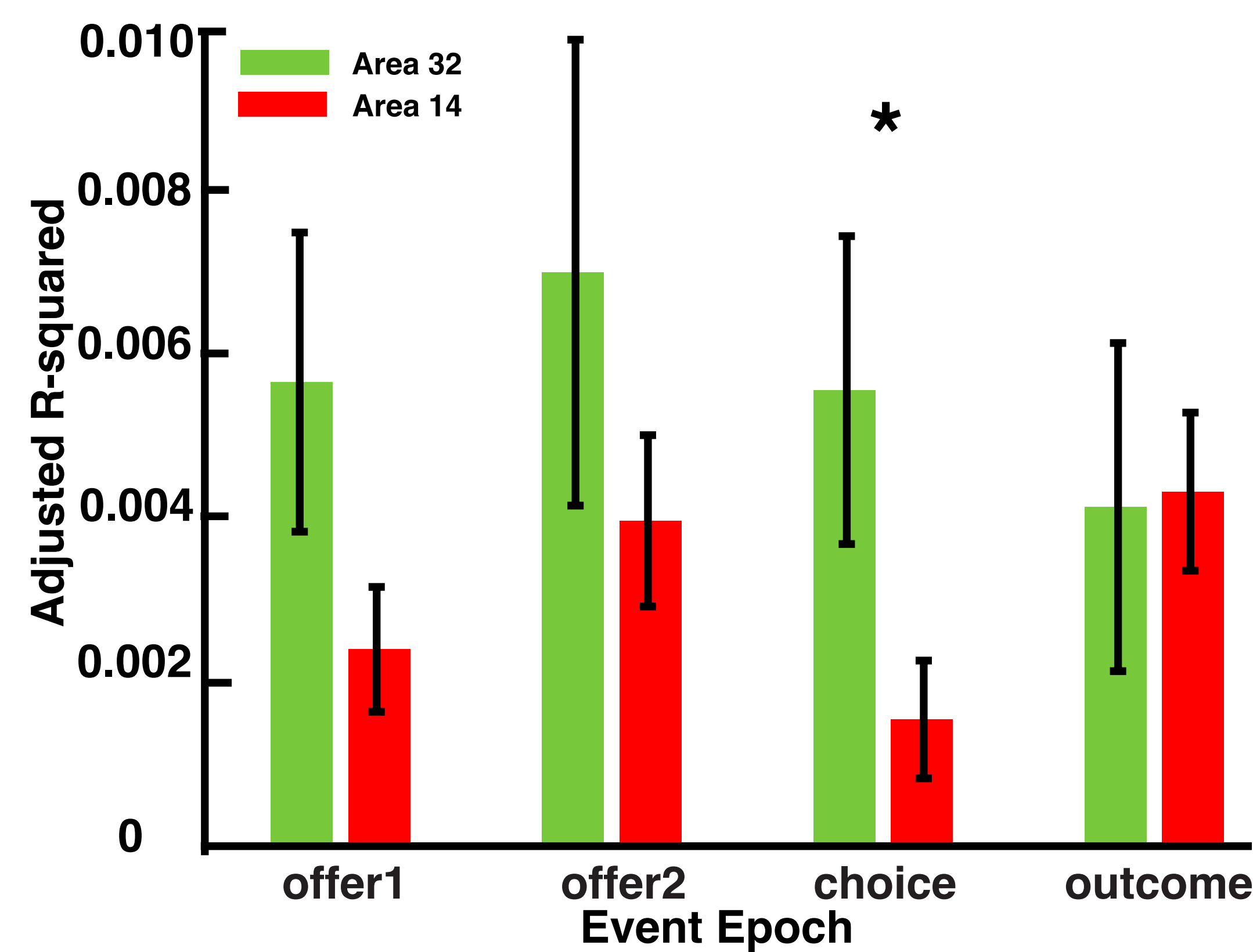
Tuning direction for offer 1 and offer 2 was not skewed in neither Area 14 nor Area 32.



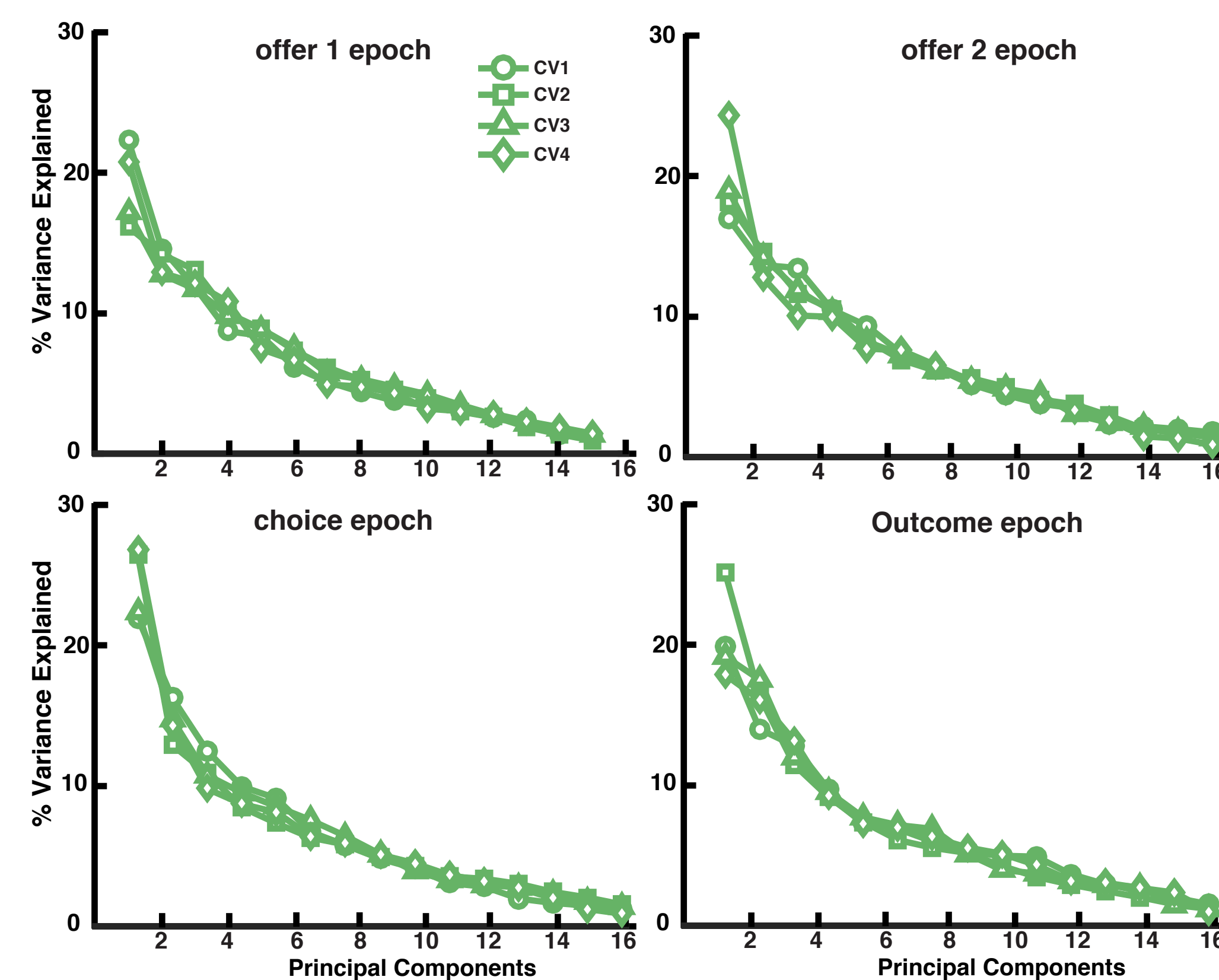
Regression coefficient roughly equally distribute around zero.

Dimensionality Expansion

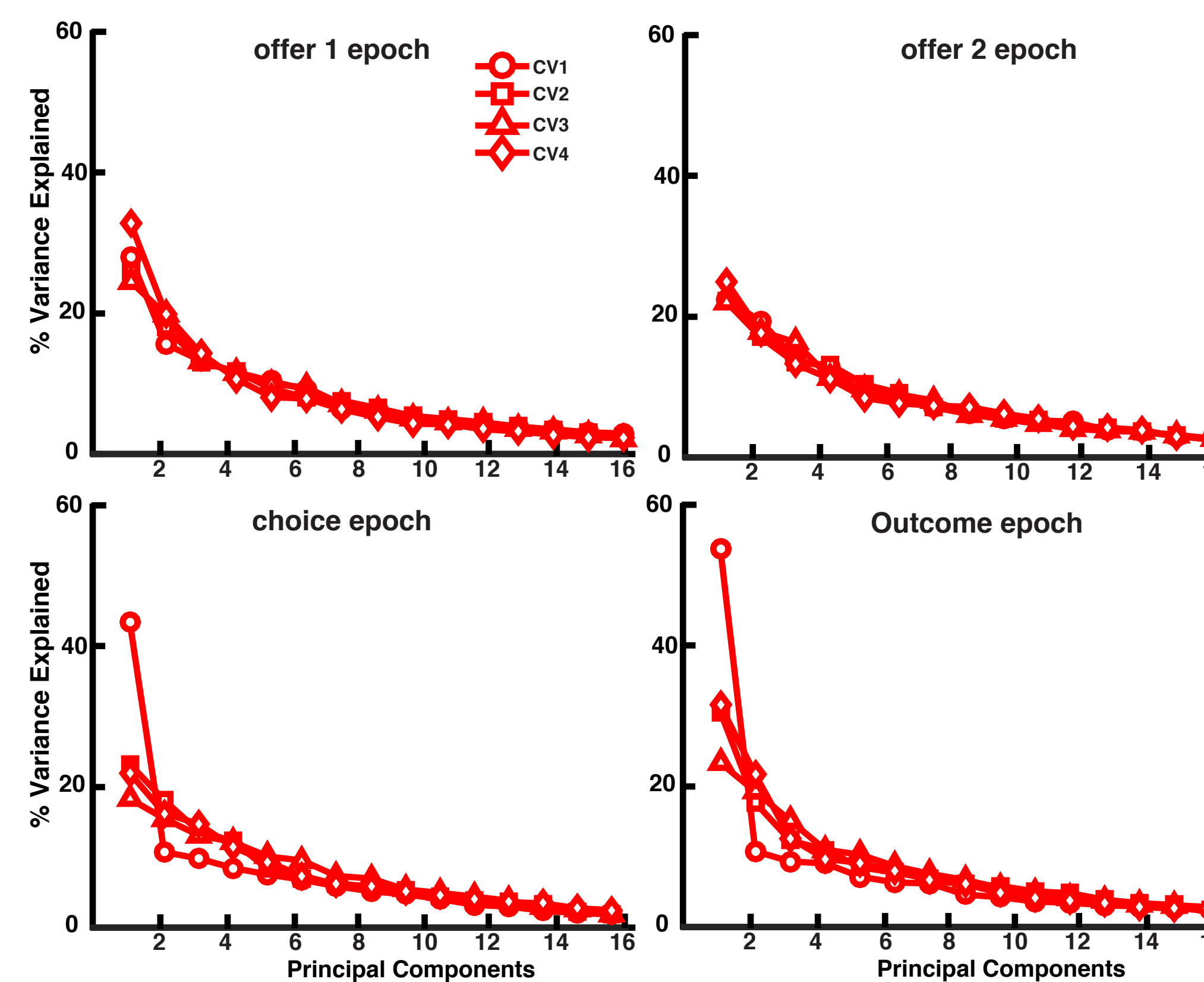
Task parameters explained similar amount of variance in neural activity in Area 14 and 32 in all but choice epoch, suggesting similar signal to noise ratio



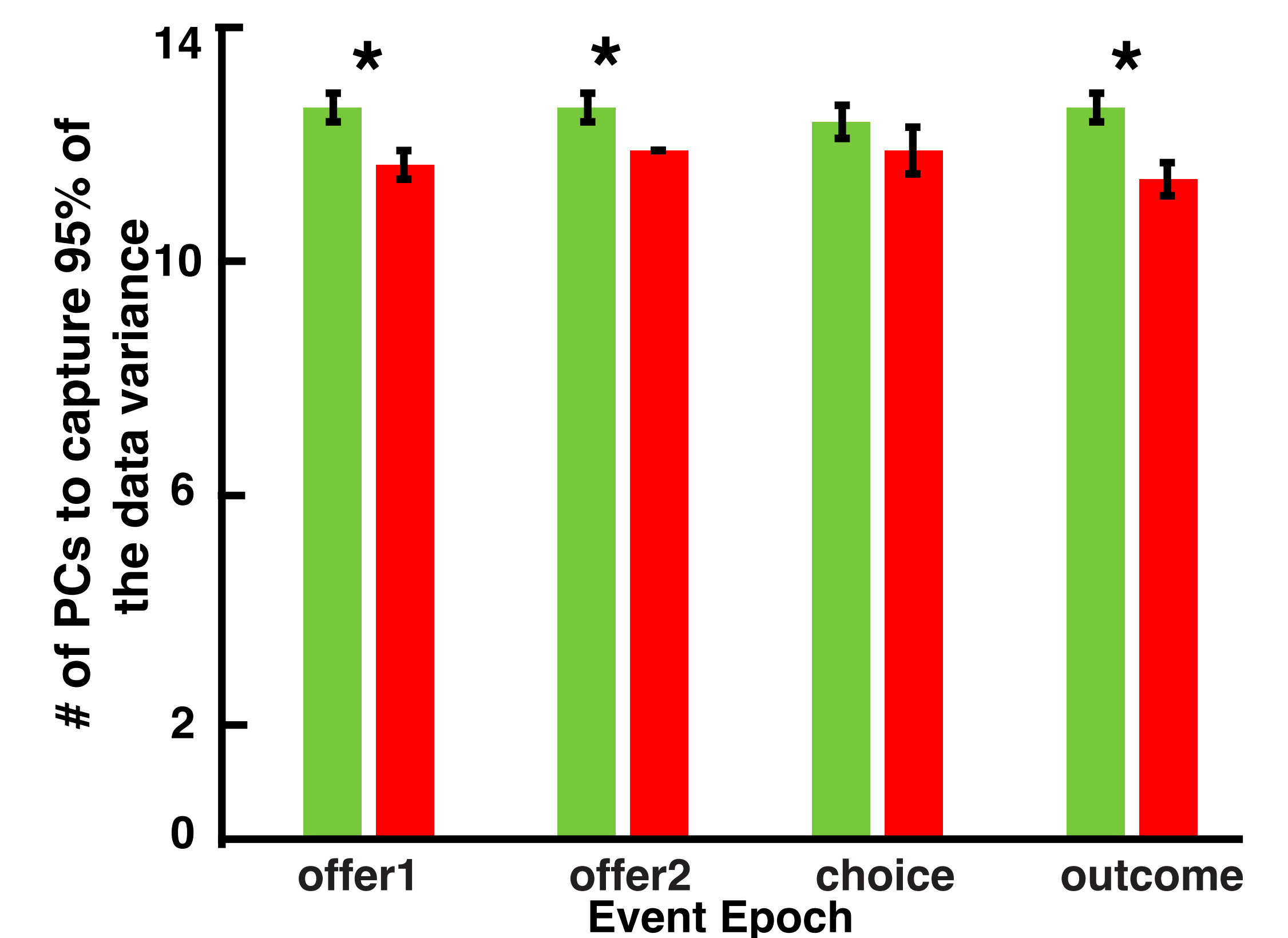
Principal component analysis reveals that on average 13 PCs can capture 95% of the variance in Area 32.



Principal component analysis reveals that on average 12 PCs can capture 95% of the variance in Area 14.



Task parameters explained similar amount of variance in neural activity in Area 14 and 32 in all but choice epoch, suggesting similar signal to noise ratio



References

Machens, C. K., Romo, R., & Brody, C. D. (2010). *The Journal of Neuroscience*.
Fusi, S., Miller, E. K., & Rigotti, M. (2016). *Current Opinion in Neurobiology*.
Rigotti, M., Barak, O., Warden, M. R., Wang, X.-J., Daw, N. D., Miller, E. K., & Fusi, S. (2013). *Nature*.

Acknowledgement

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