# Consequences of visual production training for neural object representations

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#### Abstract

Intro sentences go here. The current study directly evaluates how practice drawing objects affects their underlying representation in ventral temporal cortex using fMRI. All three phases (pre, training, post) of the study were scanned. During training, participants alternately drew two objects (e.g., table, bed) on an MR-safe tablet. Before and after training, they viewed these and two other control objects (e.g., chair, bench), so that we could obtain estimates of the neural representation of each object. More methods and results sentences go here.

**Keywords:** drawing; learning; perception and action; vision; fMRI;

1	Introduction
2	Methods
3	Stimuli
4	Task and procedure
5	Recognition task
6	Production task
7	fMRI data acquisition and preprocessing
8	Measuring object representation during recognition and production
9	Connectivity pattern similarity analysis
10	Searchlight analysis
11	Results
12	Shared representations during recognition and production
13	Sustained selection of target object during drawing within early visual, parietal, frontal regions
14	Sustained selection of target object during drawing between regions
15	Relationship between target selection and representational differentiation
16	Distinct dynamics in target object representation in visual and frontal regions during drawing
17	Discussion
18	Code availability
19	The code for the analyses presented in this article will be made publicly available in a Github repository upon

acceptance of this manuscript.

## Data availability

- 22 The data presented in this article will be made publicly available in a figshare repository upon acceptance of
- 23 this manuscript.

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### 28 Author contributions statement

- <sup>29</sup> J.E.F., D.L.K.Y., N.B.T.-B., K.A.N. designed the study. J.E.F. performed the experiments. J.E.F., J.D.W.,
- J.B.G., R.S.L. conducted analyses. J.E.F., J.D.W., J.B.G., R.S.L., K.A.N., and N.B.T.-B. planned analyses,
- 31 interpreted results, and wrote the paper.

# 32 Additional information

The authors declare no competing interests.

34 References