
CSAIL

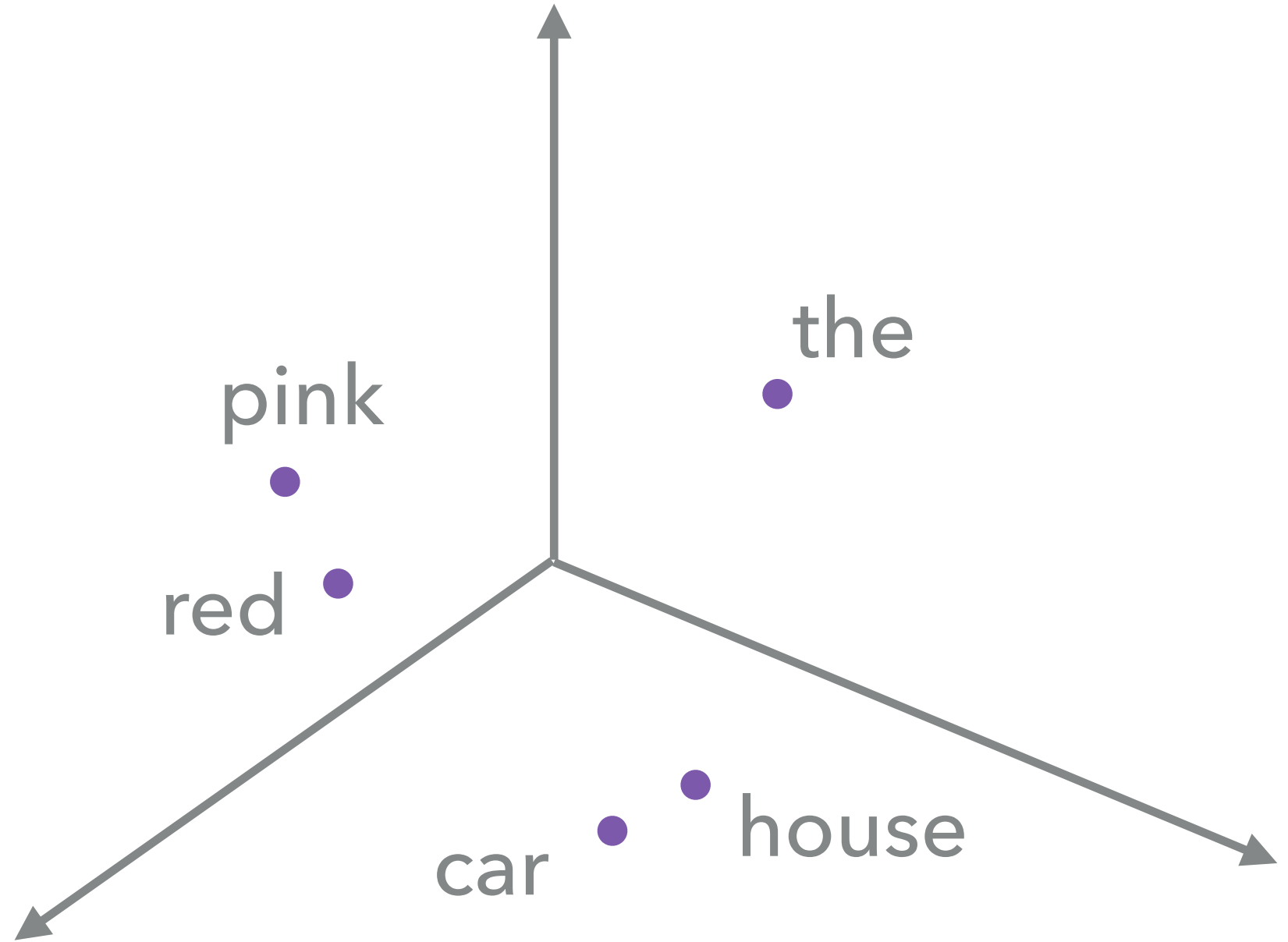
BACKGROUND

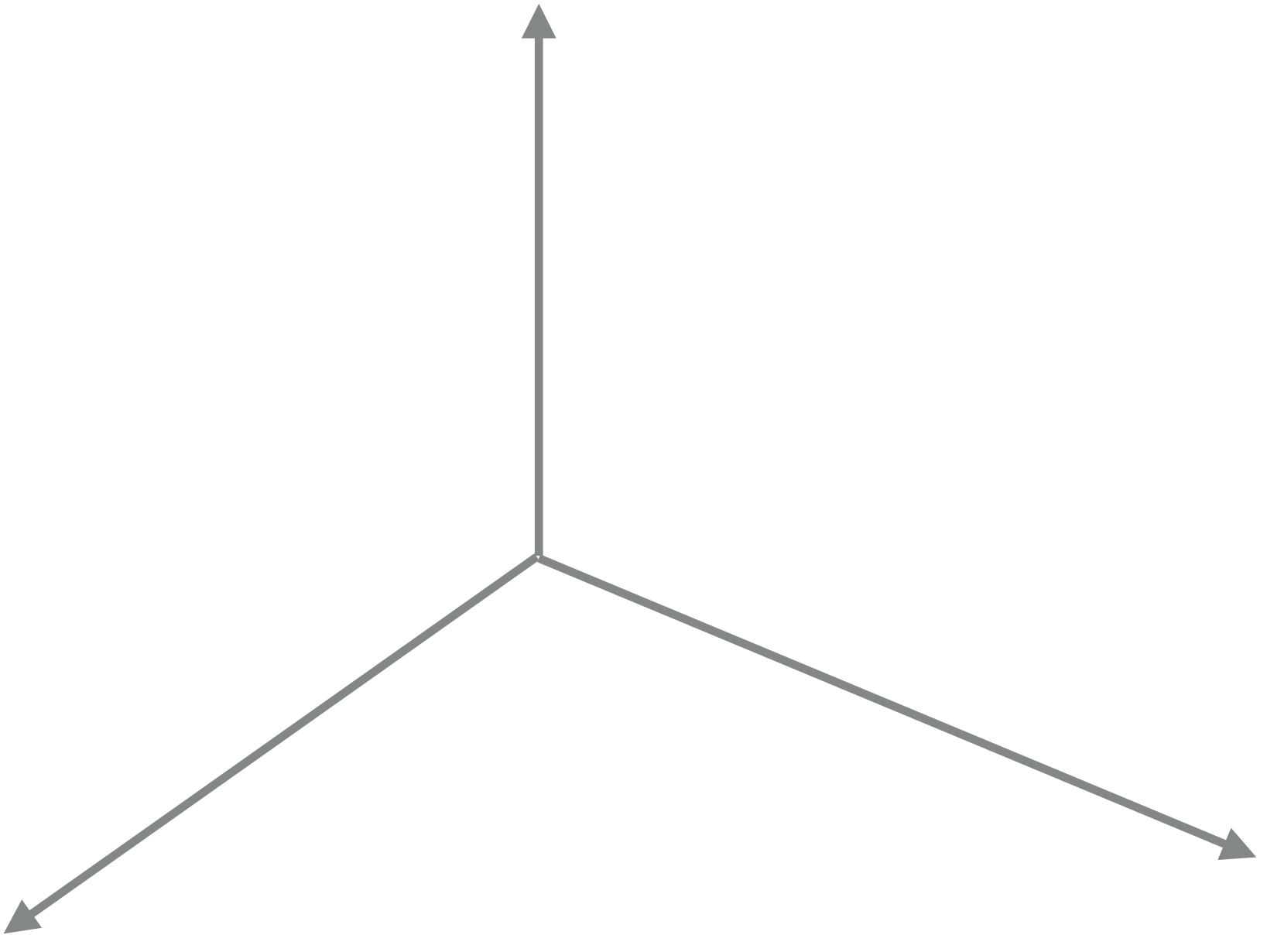
OPTIMAL TRANSPORT BETWEEN WORD EMBEDDINGS

- Treat embeddings as support points of discrete distribution

- But this assumes the two spaces are ***registered*** (~axes are in correspondence)

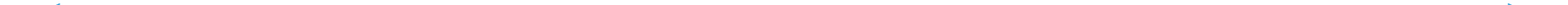
- Not true in general for word embeddings in different languages!


the
pink
red
car
house

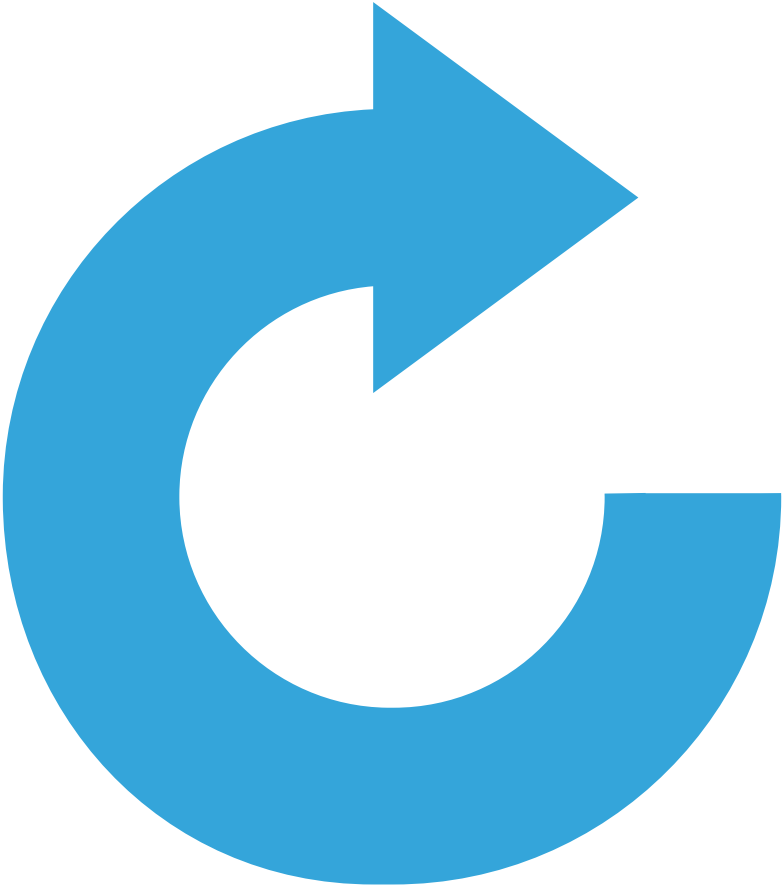


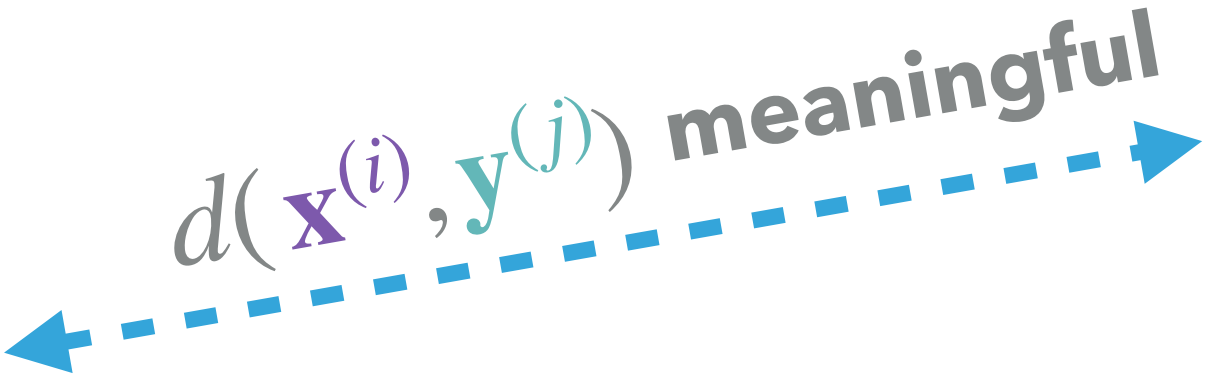

el
la


casa
coche



[Kusner et al. 2015; Zhang et al . 2017]




$d(\mathbf{x}^{(i)}, \mathbf{y}^{(j)})$ meaningful

$d(\mathbf{x}^{(i)}, \mathbf{y}^{(j)})$ meaningless

(identical under word embedding objective)

OPTIMAL TRANSPORT BETWEEN WORD EMBEDDINGS

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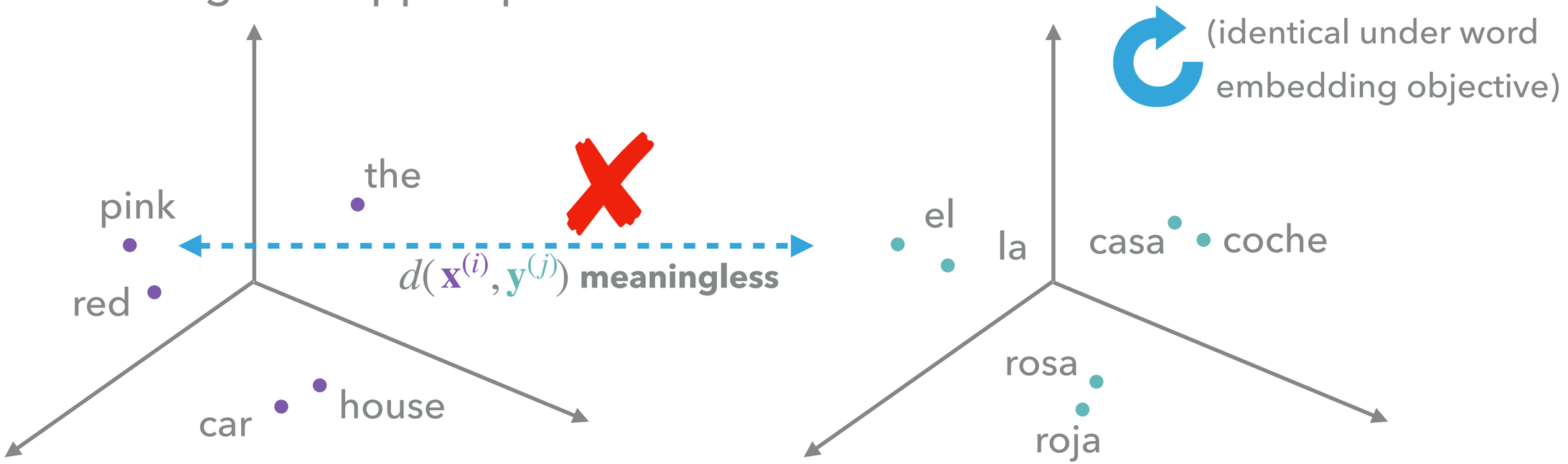

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TAILORING OT TO UNREGISTERED SPACES: APPROACH 1