



# Phrase Analogies in Large VAES

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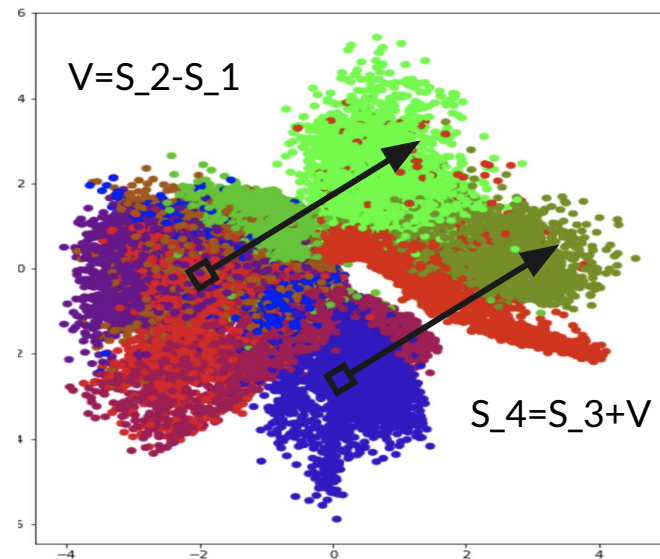
# Phrasal Analogies

“The two dogs run” is to “The dog runs” as “Two boats were sailing” is to what?

Sent\_A : Sent\_B :: Sent\_C : Sent\_D

We would expect something like Sent\_D =: “A boat was sailing”

(There is additional variability that does not exist in lexical analogies)\*



Abstract Analogy in Latent Space



# Datasets and Evaluation

## Syntactic (Opposites, Comparatives, Plurals)

- Datasets
  - Phrase pairs based off of syntactic transformations.
  - (i.e .  $S_a$  =: The boy is taller than me :  $S_b$  =: The boy is tall)
- Evaluation
  - Mean Bleu Score, Median Bleu Score, percent of Exact Matches.

## NLI (Entailment, Contradiction)

- Datasets
  - SNLI and MNLI
- Evaluation
  - 3-way and 2-way gold label prediction



# Results

Table 1: Syntax Analogies

Category	Avg(BL)	Med(BL)	Exact
Plurals	0.297	0.2242	6.32%
Opposites	0.1658	0.0002	0.1%
Comparatives	0.3579	0.3117	10.28%

Table 2: NLI Analogies

Category	3-way	2-way
<b>SNLI Test Set</b>	–	–
Overall	49.63%	64.61%
Entailment (51.2%)	43.09%	55.62%
Contradiction (48.8%)	56.48%	74.04%
<b>SNLI Train Set</b>	–	–
Overall	48.69%	62.57%
Entailment (51.1%)	42.73%	54.71%
Contradiction (48.7%)	55.07%	70.98%