

Simulating Action Dynamics with Neural Process Networks

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Understanding by Simulation

Understanding by Labeling

- Label syntactic and semantic categories for surface words
- Strong focus on what is explicitly stated in text

- 1) Slice apples into pieces. 3) Lay them in the pie sheet.
2) Sauté them until browned. 4) Bake for 30 minutes.

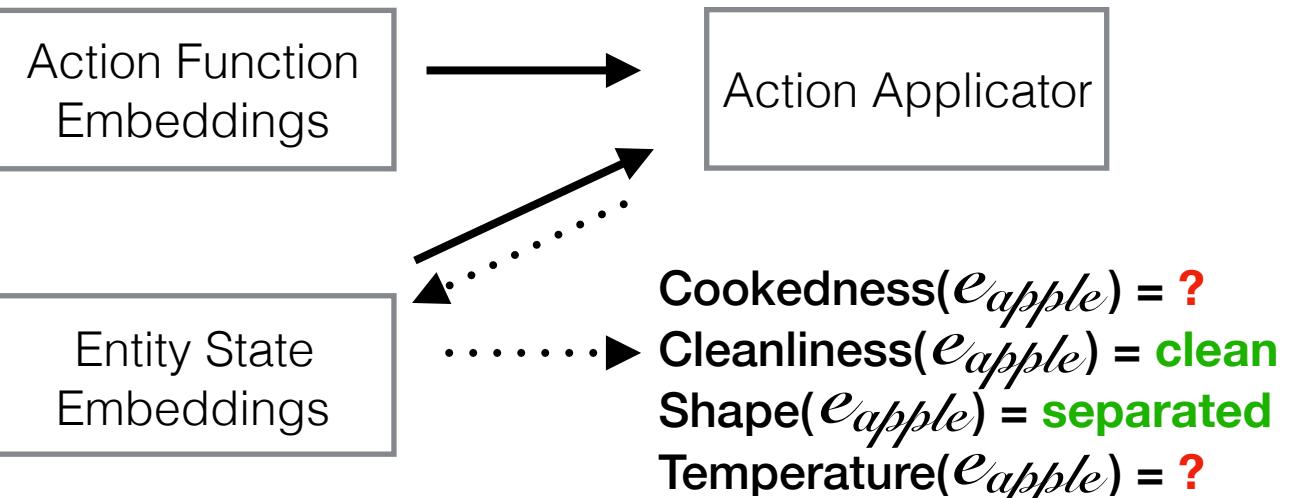


Understanding by Simulation

- Simulation of causal effects of descriptions in text
- Strong focus on what is implied in text
- MemNNs (Sukhbataar et al., 2015); EntNet (Henaff et al., 2016)

Action-Oriented Simulation

"Wash and slice the apples"



Approach:

- Action function embeddings transform entity state embeddings
- Entity states tracked through time by embedding representation
- Current state of entity encoded in state embedding
- Crowdsourced end state labels induced by actions
- Errors in predicting state backpropagate to action functions

