

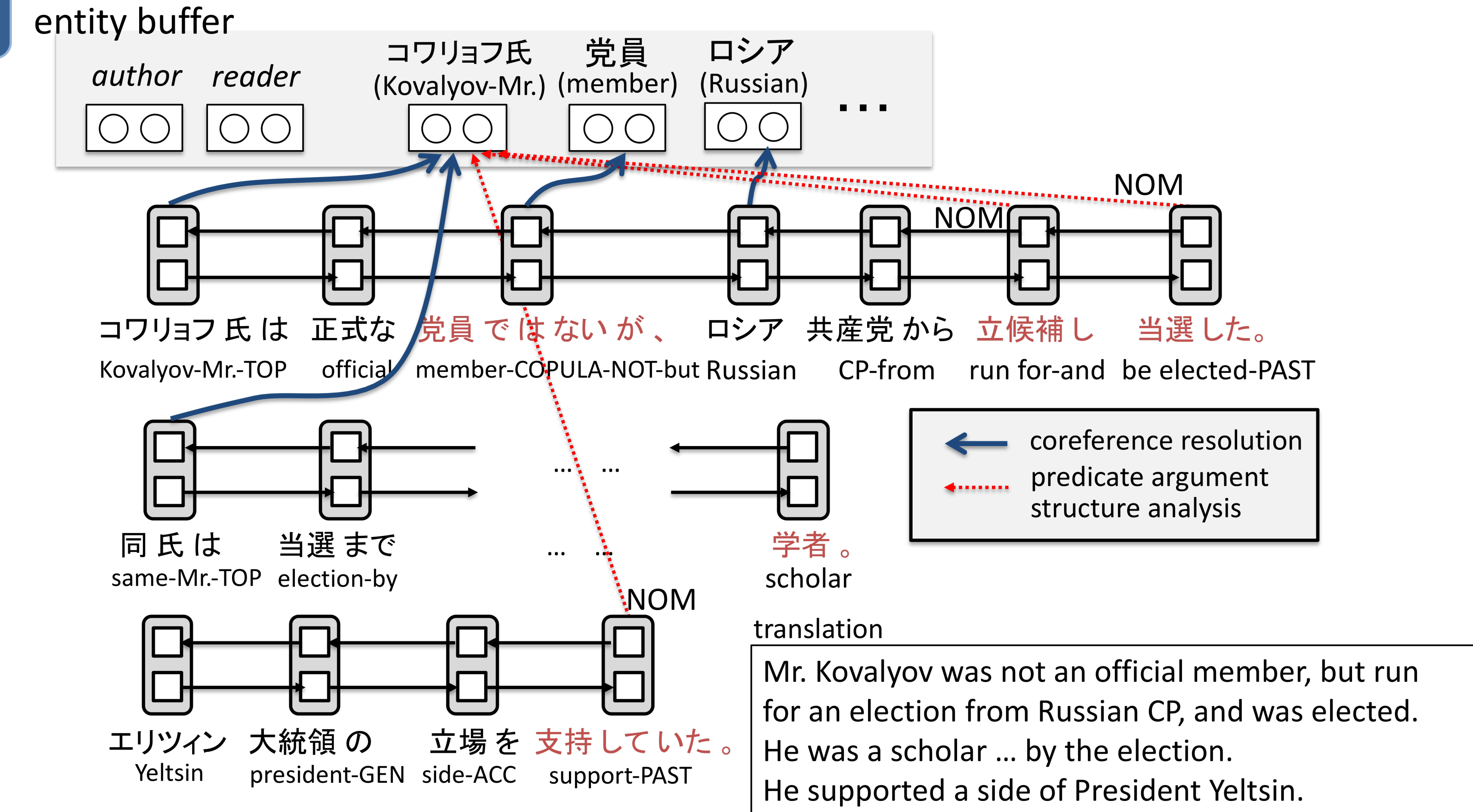


Overview

- ◆ **Predicate argument structure analysis** is a task of identifying structured events
- ◆ Need to identify a salient entity, which can be identified by performing **coreference resolution (CR)** and **predicate argument structure analysis (PA)** jointly
- ◆ Our work is inspired by [Wiseman+ 16], an English CR system which uses embeddings for an entity
 - Each entity is assigned an embedding, and is updated dynamically
 - The analyses take the entity embedding into consideration to access global information of entities

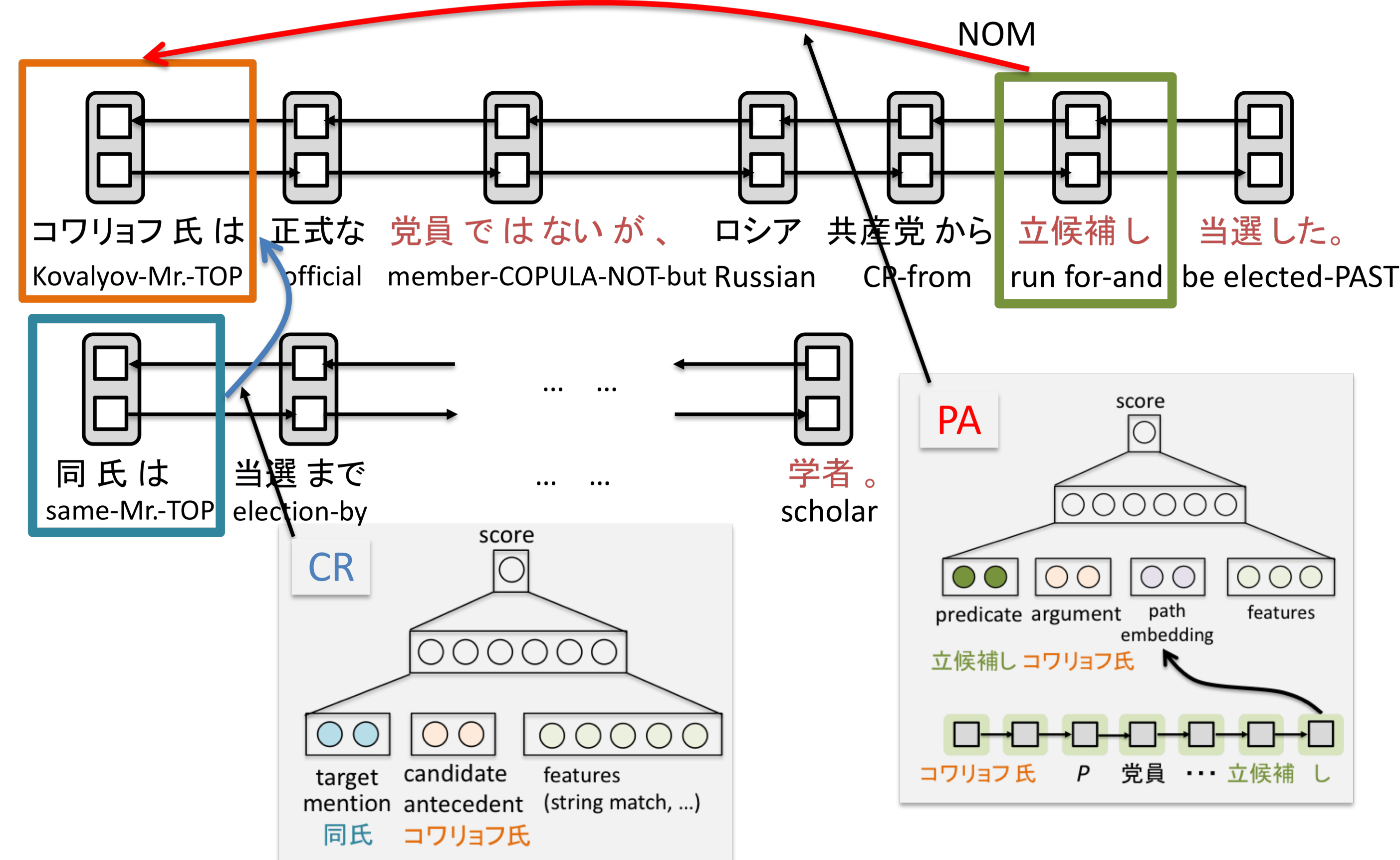
Contribution

- Use entity embeddings for Japanese **PA**
- Improve drastically inter-sentential zero anaphora resolution performance



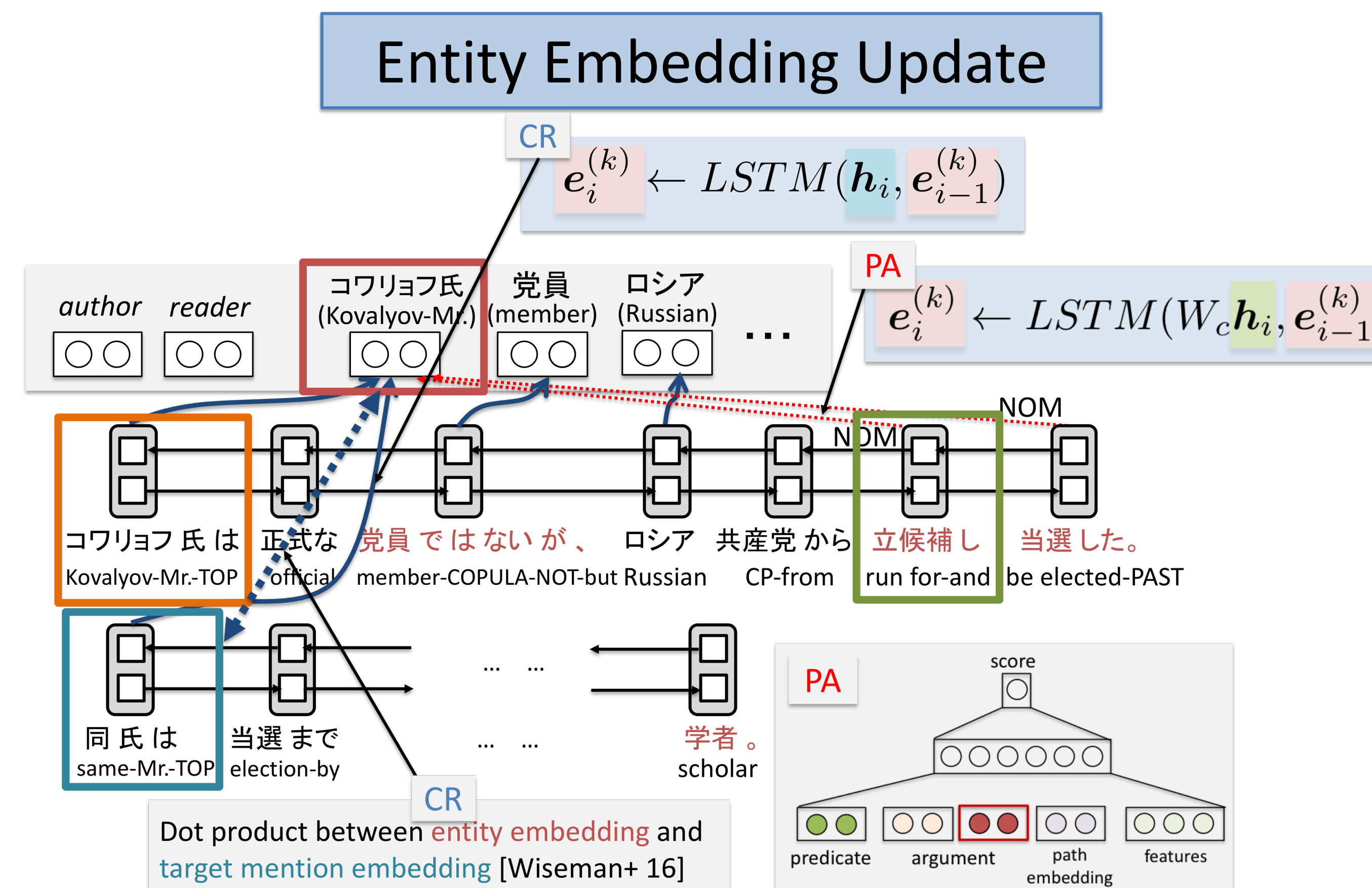
Base Model

- ◆ The contextual representations of basic phrases are obtained by using CNNs and Bi-LSTMs
- ◆ From the beginning of an input text
 - Perform **CR** if a target phrase is a noun phrase
 - Perform **PA** if a target phrase is a predicate phrase



Entity-Centric Model

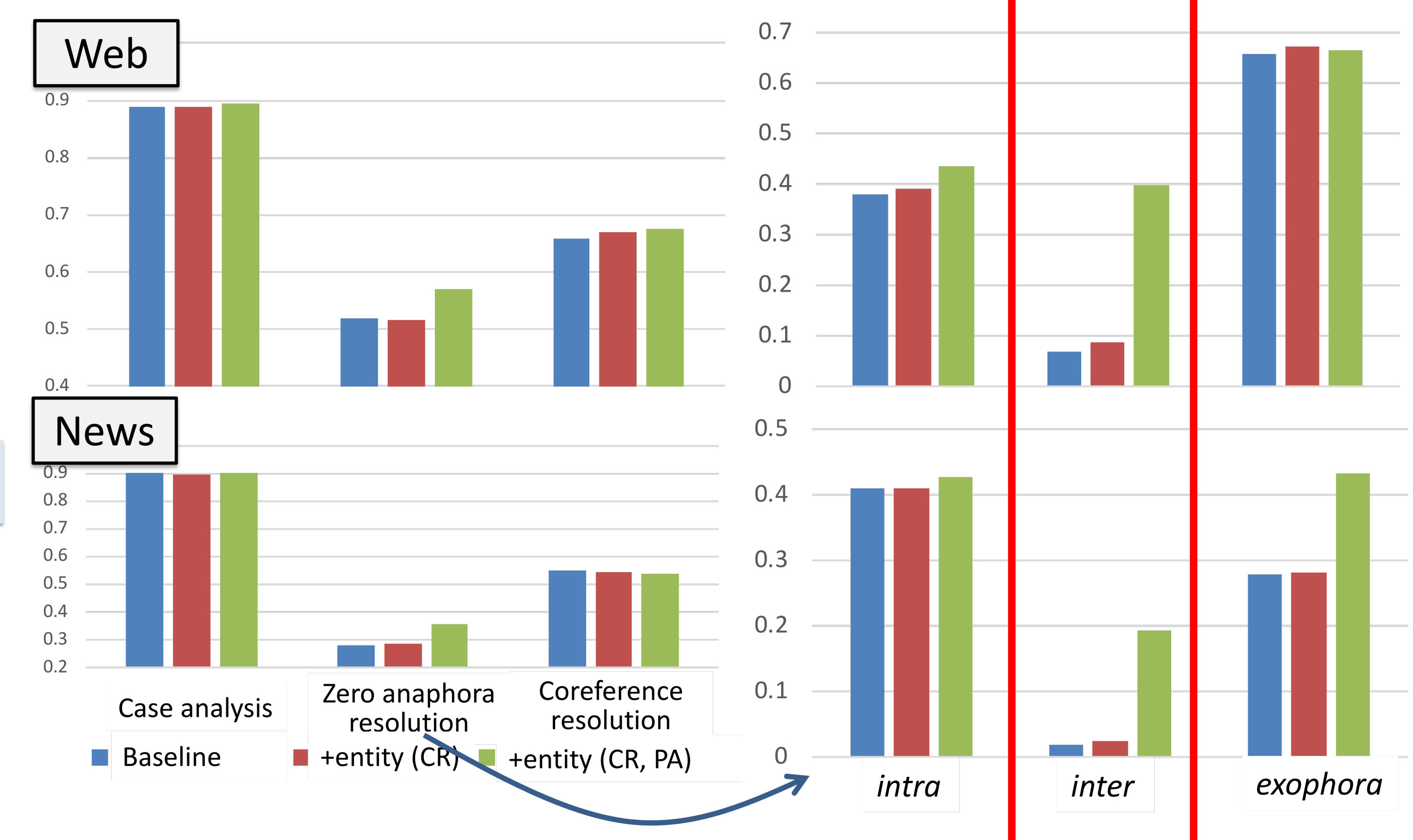
- ◆ Each entity is assigned an embedding, and is managed in an **entity buffer**
- ◆ When the result of both analyses refers to an entity, the entity embedding is updated by LSTM
- ◆ The analyses take the entity embedding into consideration



Use of Entity Embedding in CR and PA

Experimental Results

- ◆ Evaluation sets:
 1. Kyoto University Web Document Leads Corpus (Web)
 2. Kyoto Corpus (News)



Future Work

- ◆ Global modeling using reinforcement learning
- ◆ Bridging reference resolution