

# Progressive Comparison for Ranking Estimation

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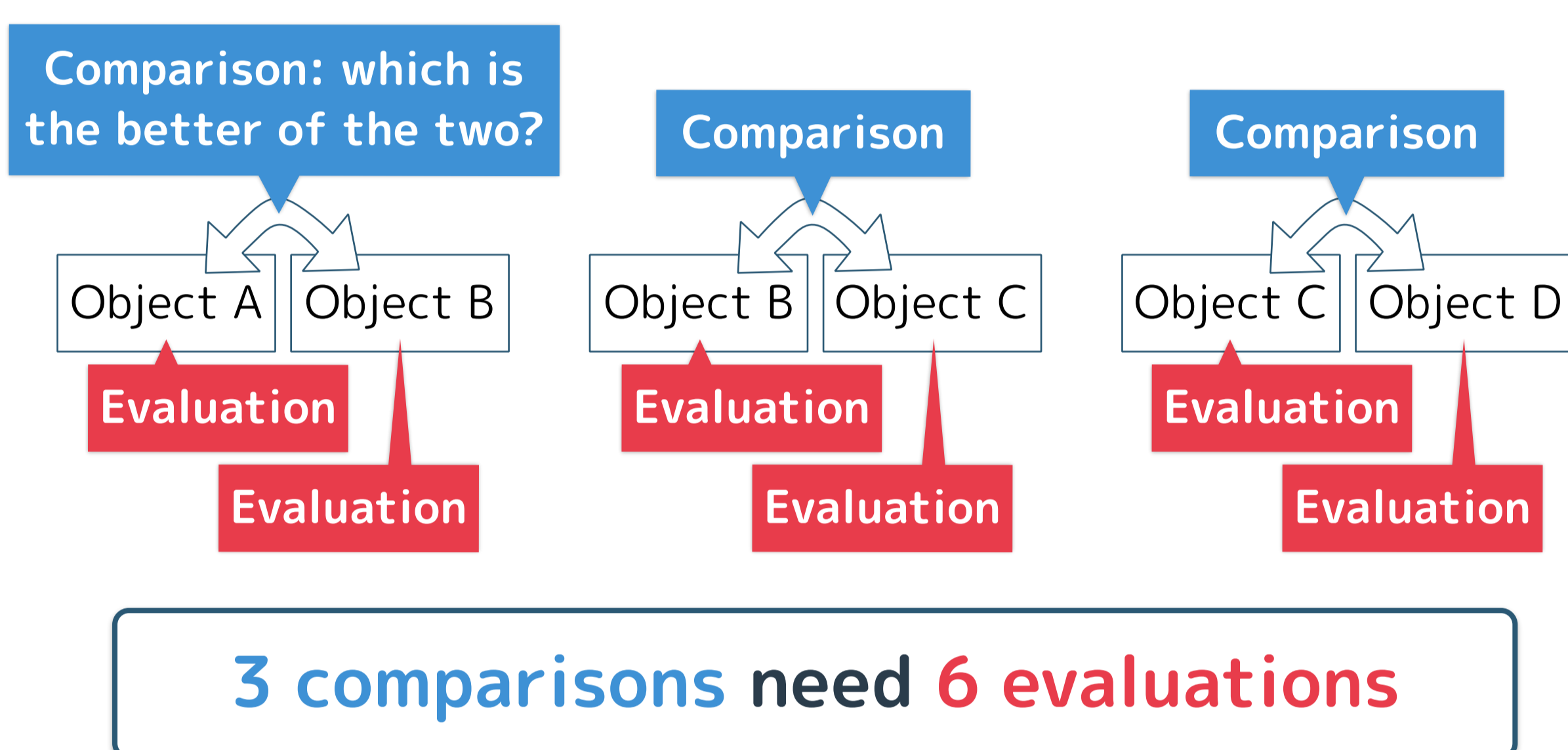
## Abstract:

- Problem: ranking estimation from comparison data
- Collection of comparison results is often costly
- Progressive Comparison and its active learning method are proposed
- Experimental results confirmed efficiency of proposed methods

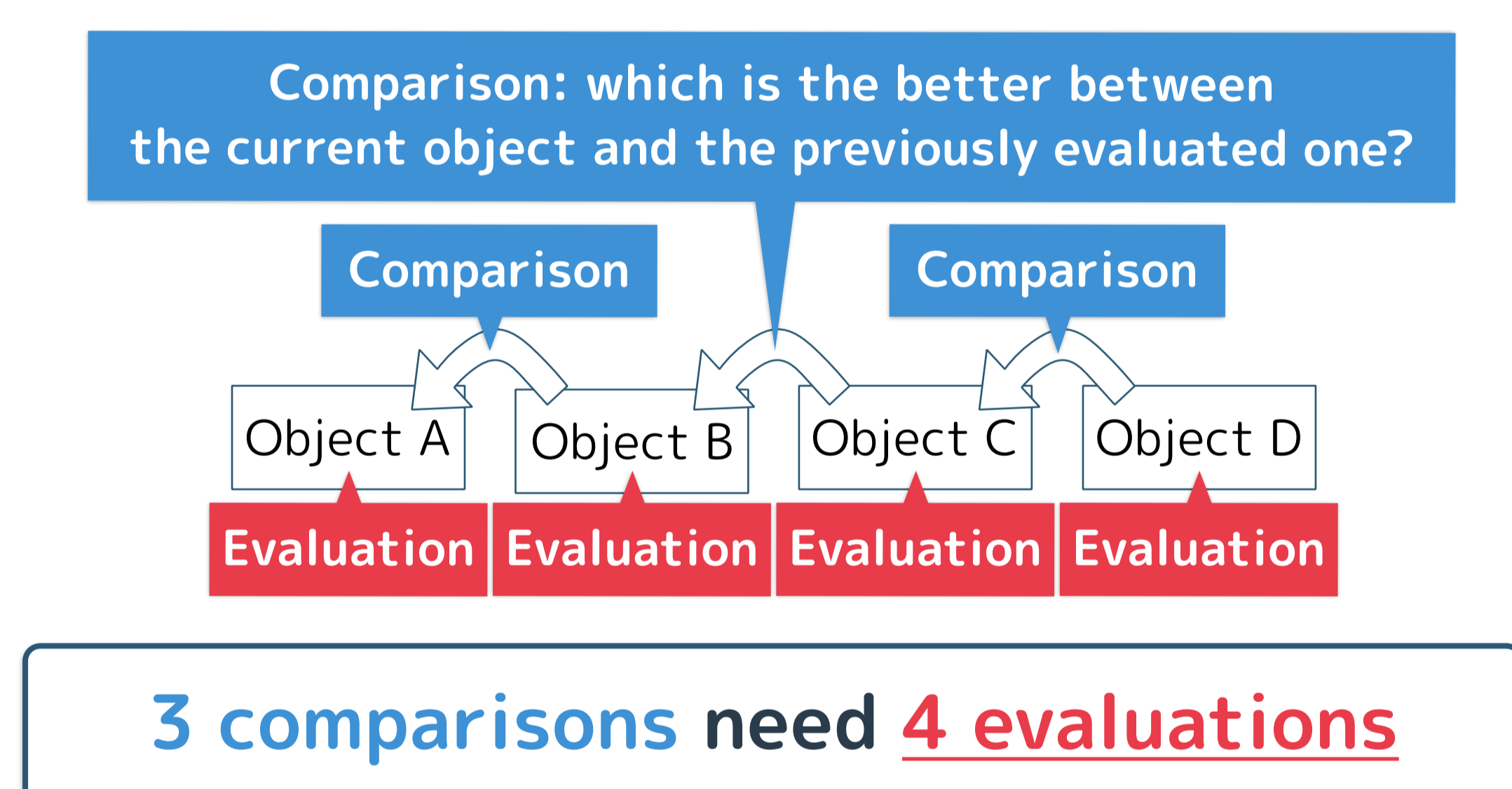
## Proposed methods: reduce the number of object evaluations

### Data-collection

Standard pairwise comparison:  
Evaluate 2 objects, then compare them



Progressive Comparison: Compare new object with the preceding evaluated one

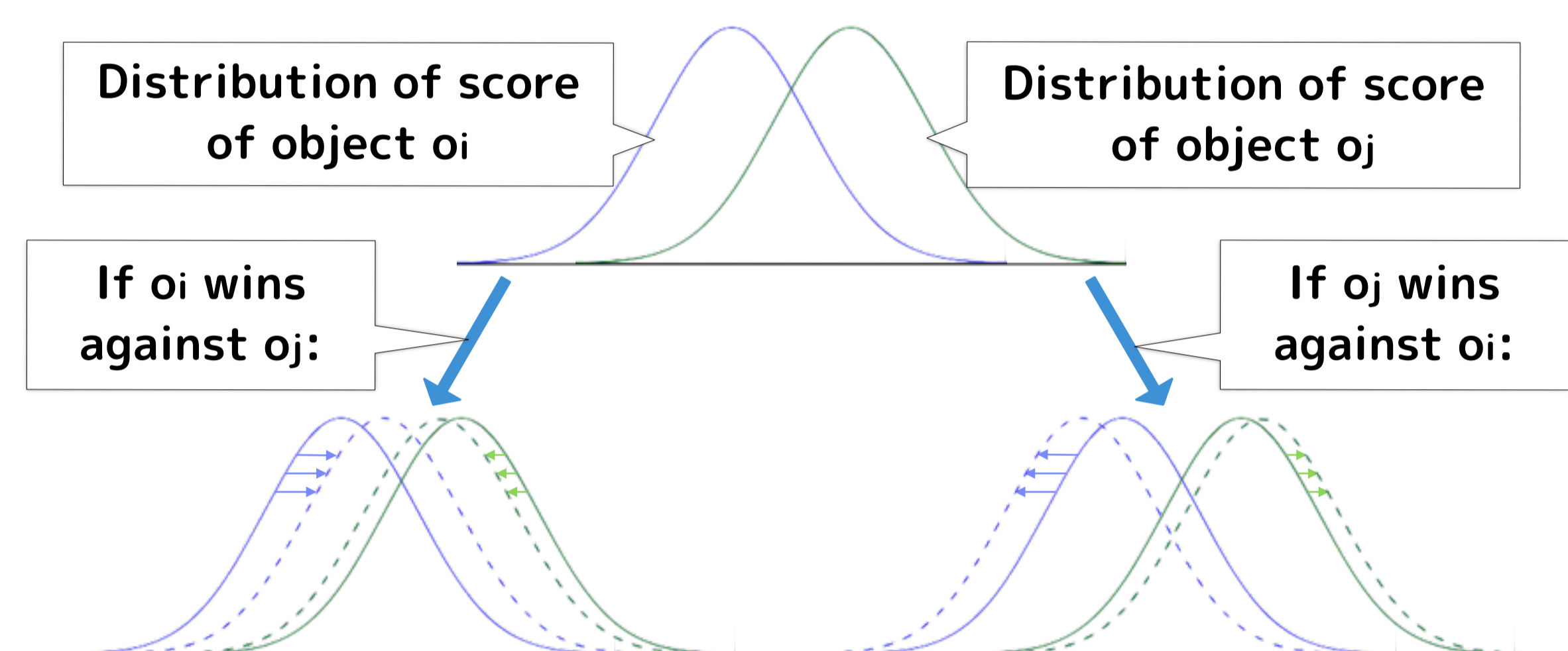


### Active learning

Priority given to a pair that has larger  $u$  value

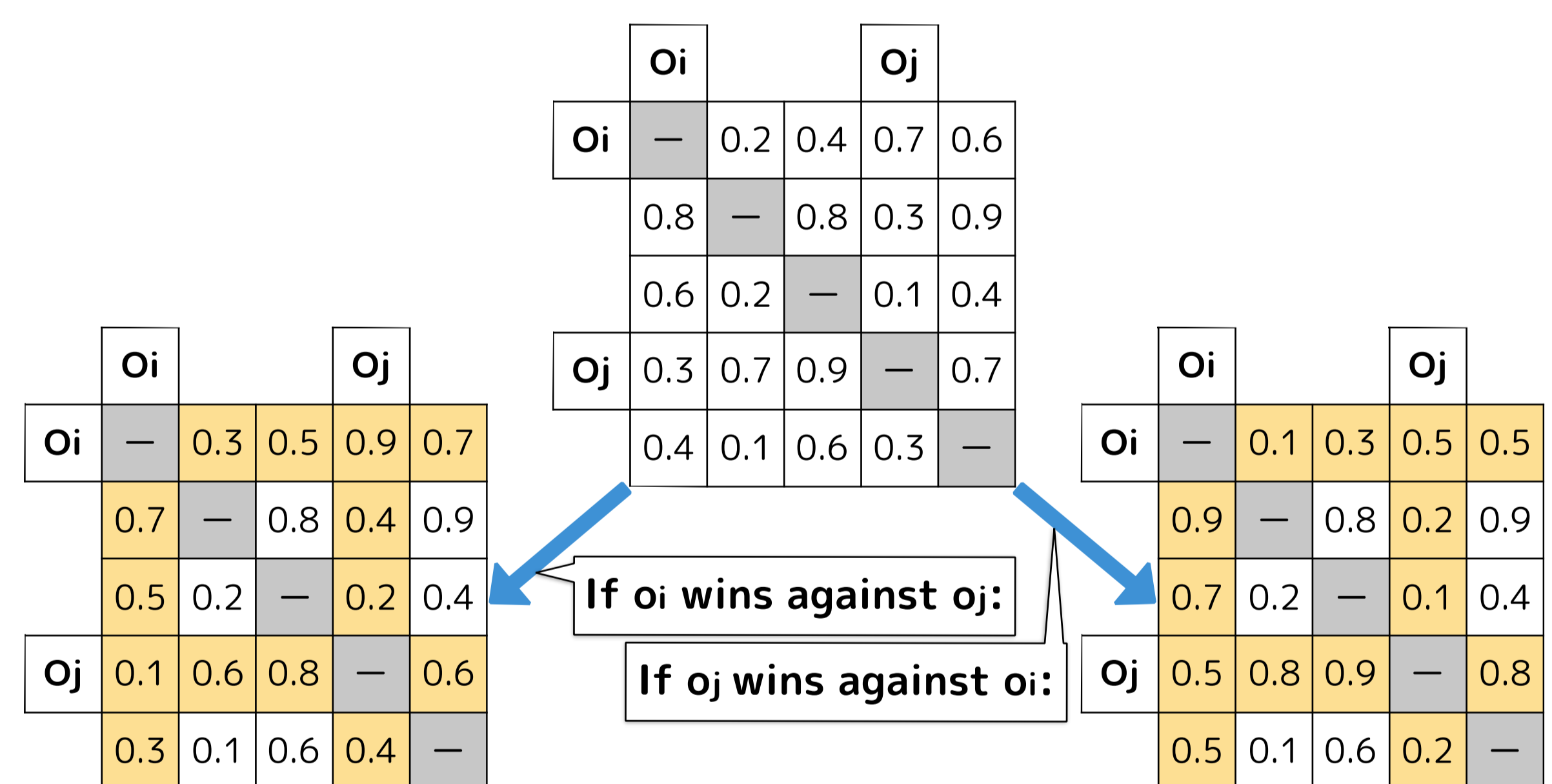
#### 1. Change in Distributions (CiD):

$u$  = expectation of changes in distributions



#### 2. Change in Winning Probabilities (CiWP):

$u$  = expectation of changes in winning probability matrix



## Experiment results: using Wikipedia article comparison dataset

