

Template-guided Grammatical Error Feedback Comment Generation

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Summary

- Current NLP **writing support** tools focus on **correcting errors**, not helping users learn from them.
- For **learning support**, educational research recommends detailed and specific **feedback comments**.
- **Our Goal:** Generate feedback comments which **diagnose** errors and **explain** the underlying reasons.
- **Challenge:** Error typologies cover changes to text, but feedback is often about **what rules were broken**.

Writing Support vs. Learning Support

If I am you, I'd be angry.



GRAMMAR

am → were

It appears that your sentence or clause uses an incorrect form of the verb **am**. Consider changing it.

Learn more

- Designed to correct text, not teach users.
- May not explain **why** there is an error.
- One-click fixes can be applied without understanding.

If I am you, I'd be angry.

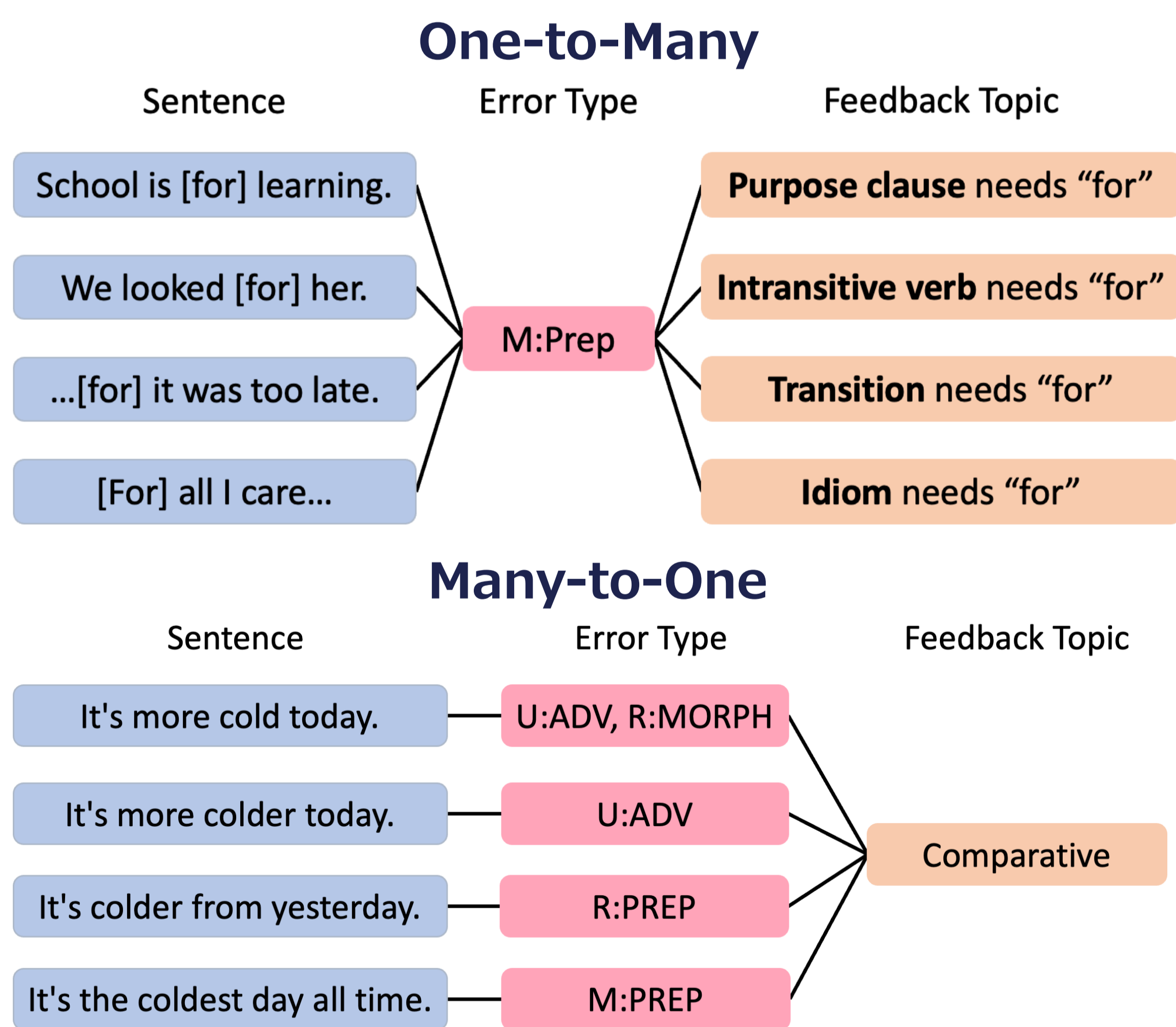
Learning Support System

In a **conditional** sentence like this one, the first verb should be in the past tense or subjunctive.

- Explains **why** "am" is wrong and **what to change**.
- Keywords for learning about the rule (conditionals).
- Writer has a chance to learn and apply the rule.

Unsuitability of Error Typologies

- Error types from Grammatical Error Correction (GEC) **do not cover** broader **topics** identified in teacher feedback comments.
- The relationships between them can be complex:



Error types from ERRANT (Bryant et al., 2017)

Proposed Typology

Three Levels of Abstraction

Operational:

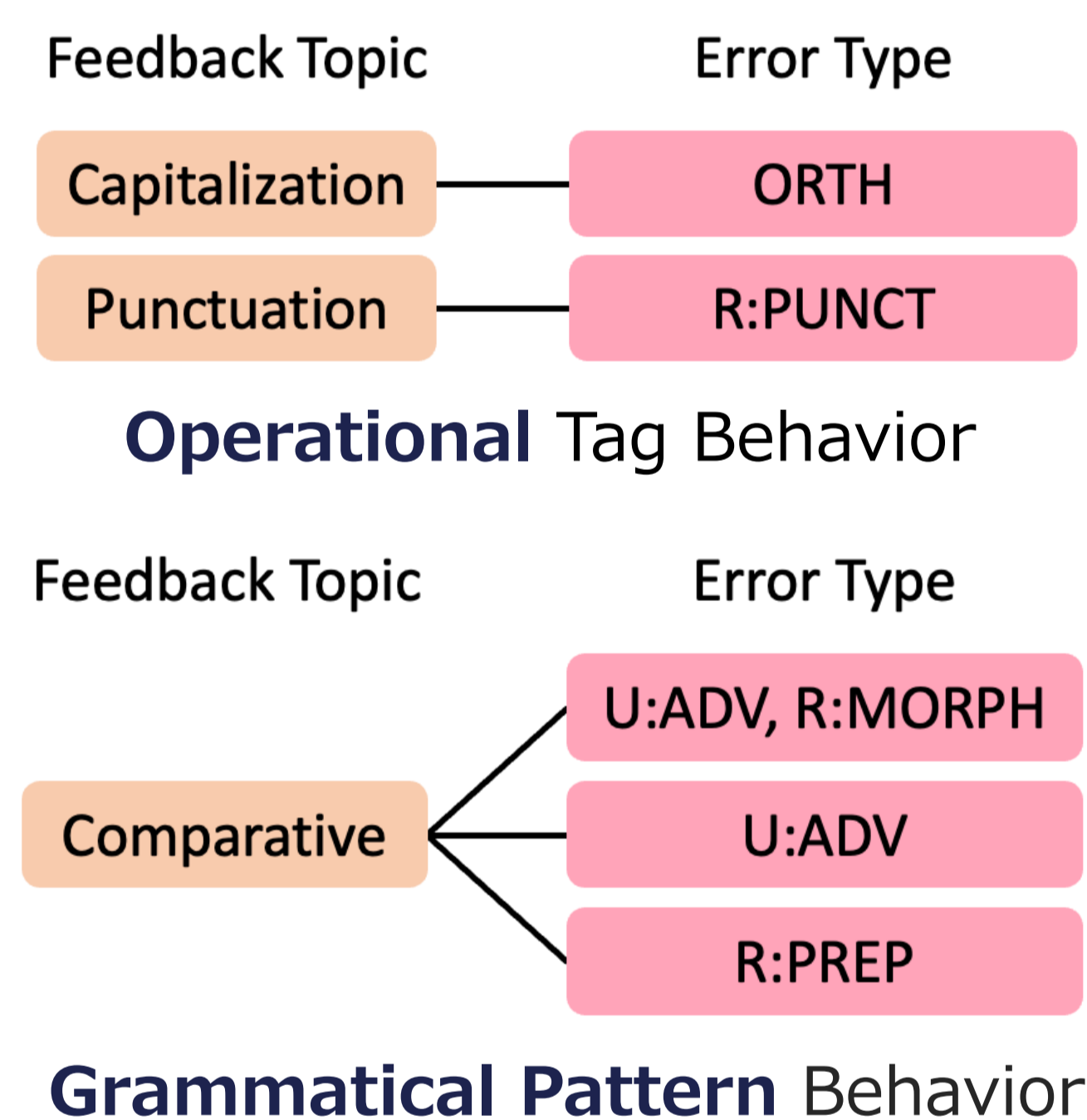
Straightforward match with one or a few errors and edits.

Grammatical Patterns:

Map to more complex sets or combinations of errors.

Abstract:

May map to "any" or "none" of the possible combinations.

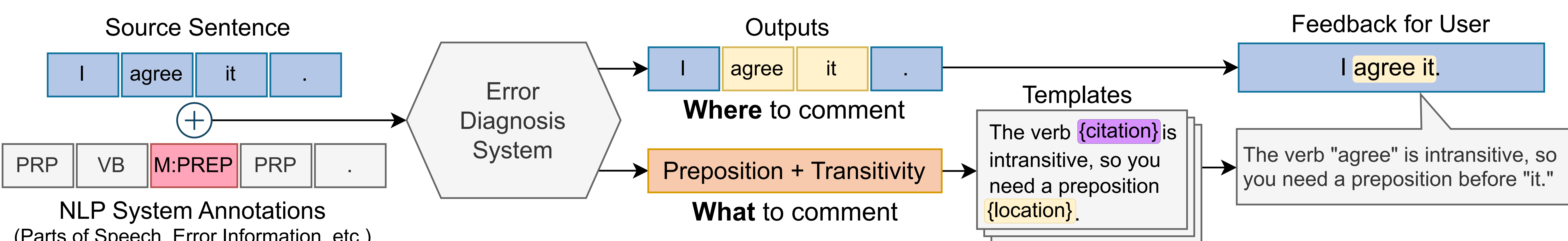


Grammatical Pattern Tags

Tag Name	Example
Comparative	Study [more hard → harder] at school.
Preposition+Transitivity	I agree [∅ → with] that idea.
Purpose Clause	We go to school [for → to] learn.
Transition	[But → However,] tuition is expensive.

Sample of proposed Grammatical Pattern Tags, a "middle level" of comment abstraction.

Next Steps: Generating Feedback Comments



Errors and Linguistic Tags as Features

Hypothesis: These will help identify profiles of different errors and associated feedback comments.

Classify Feedback and Convert to Templates

Templates with "slots" to fill with information from the sentence. **Neural text generation** may also be used for some feedback types.