

Detecting Knowledge Inconsistencies Across Text, Tables, and Knowledge Graphs - Abstract

Fanfu Wei^{1,*}, Thibault Ehrhart¹ and Raphaël Troncy¹

¹EURECOM, France

Abstract

Wikipedia and Wikidata are widely used for information access, LLM pre-training, and retrieval-augmented generation. Their knowledge is deeply connected but scattered across text, tables, and knowledge graphs. This raises a practical question: when these modalities disagree, how can we detect and explain the conflict? We study this problem as *modality-level inconsistency detection*. We first introduce a taxonomy of cross-modal knowledge inconsistencies, covering information granularity differences, direct conflicts, temporal changes, and Knowledge Graph (KG) incompleteness. We then present KONTRAST (**K**nowledge **C**ontrast), an automatic framework that uses Text-to-SPARQL and LLM reasoning to compare table-based answers with KG evidence and categorize the resulting inconsistencies. Its central idea is to treat cross-modal inconsistencies as a signal for knowledge reconciliation. This work was originally published at EKAW 2026.

The taxonomy of knowledge inconsistency distinguishes seven inconsistency categories: (1) **Higher accuracy in KG than in Table**. This inconsistency occurs when the two answers are compatible, but the KG answer provides a higher level of precision and/or completeness than the table-based answer. The table-based answer remains valid, while the KG provides finer-grained or additional information. (2) **Higher accuracy in Table than in KG**. This inconsistency occurs when the two answers are compatible, but the table-based answer provides a higher level of precision and/or completeness than the KG answer. The KG answer remains valid but partial, while the table provides finer-grained or additional information. (3) **Different answer**. This conflict occurs when the table-based answer and the KG answer provide incompatible values for the same question. (4) **Temporal changes**. This conflict occurs when the correct answer depends on the temporal state of the source. (5) **Missing edge**. This inconsistency occurs when Wikidata contains the necessary entities and property but lacks the statement needed to connect them. (6) **Missing node**. This inconsistency occurs when the KG lacks an entity needed to represent the answer or an intermediate reasoning step. (7) **Missing property or qualifier**. This inconsistency occurs when the KG contains the relevant entities, but lacks the property or the qualifier needed to express the answer at the required precision. Finally, the **Same answer** category occurs when the Wikipedia table-based answer and the Wikidata KG answer refer to the same real-world entity, value, or fact at the same level of accuracy and coverage.

We construct a table-text-based QA dataset grounded in Wikipedia tables and related text passages, and evaluate KONTRAST with three Qwen3 backbones. Cross-modal inconsistencies are common: *Higher accuracy in KG than in Table* accounts for 11.3–13.5% of cases, while *Higher accuracy in Table than in KG* accounts for 7.3–9.4%. Excluding the mixed *Different answer* category, 22.7% of cases exhibit interpretable differences. In human evaluation, all 30 heuristic-stage labels and all 50 LLM-as-a-judge labels were judged correct.

These results show that text, tables, and KGs should not be treated as isolated knowledge sources. Their disagreements can reveal where one modality complements or corrects another. KONTRAST provides a practical way to discover and classify cross-modal inconsistencies for human review, supporting knowledge correction and enrichment at scale. By formalizing the task, taxonomy, and evaluation setting, this work provides a basis for future research on cross-modal knowledge consistency. Future work will extend KONTRAST from inconsistency detection to reconciliation: deciding when to update the KG, refine table evidence, add qualifiers, or keep both answers under different temporal or contextual conditions. The code and dataset are available at <https://github.com/ECLADATTA/KONTRAST>.

Keywords

Knowledge Graphs, Knowledge Inconsistencies, Text-to-SPARQL

Declaration on Generative AI

ChatGPT-5.2 was used for grammar checking. All content was reviewed and edited by the authors.

Wikidata'26: Wikidata Workshop at ISWC 2026

*Corresponding author.

✉ fanfu.wei@eurecom.fr (F. Wei); thibault.ehrhart@eurecom.fr (T. Ehrhart); raphael.troncy@eurecom.fr (R. Troncy)

🆔 0009-0008-4397-0492 (F. Wei); 0000-0003-1377-8279 (T. Ehrhart); 0000-0003-0457-1436 (R. Troncy)



© 2026 Copyright for this paper by its authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0).