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## RDF KNOWLEDGE GRAPH (MINIMAL) SCHEMA

- Core Entity Types
  - Articles
  - Entities
- Article Properties
  - Descriptive & analytical
- Entity Relationship Categories
  - Hierarchical
  - Temporal
  - Spatial
  - Political / Organizational
  - Event-related

## STATISTICS OF KNOWLEDGE GRAPHS

- Disinformation articles KG:
  - Relational triples: 9967
  - Heads (subjects): 1438
  - Relations (predicates): 121
  - Tails (objects): 4648
- Trustworthy articles KG:
  - Relational triples: 10365
  - Heads (subjects): 1510
  - Relations (predicates): 137
  - Tails (objects): 5309



This research was funded by the Research Council of Lithuania (LMTLT), grant agreement No. S-PD-24-88.

# Disinformation vs. Trustworthy News: A Knowledge Graph-Based Analysis of Narrative and Framing Patterns

## GOAL

Examination of narrative construction patterns in disinformation and trustworthy news articles via methodological framework that uses large language models and knowledge graphs in combination.

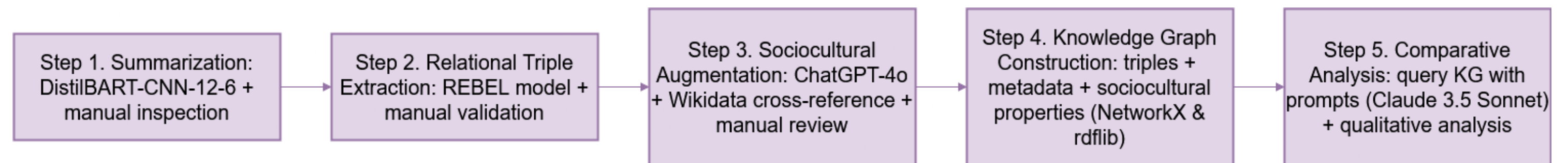
## INTRODUCTION

- Disinformation challenges public understanding and democratic discourse.
- Knowledge Graphs enhance narrative analysis, bias detection, and causal reasoning.
- Advances in LLMs and Knowledge Graphs boost comprehension of complex news narratives.

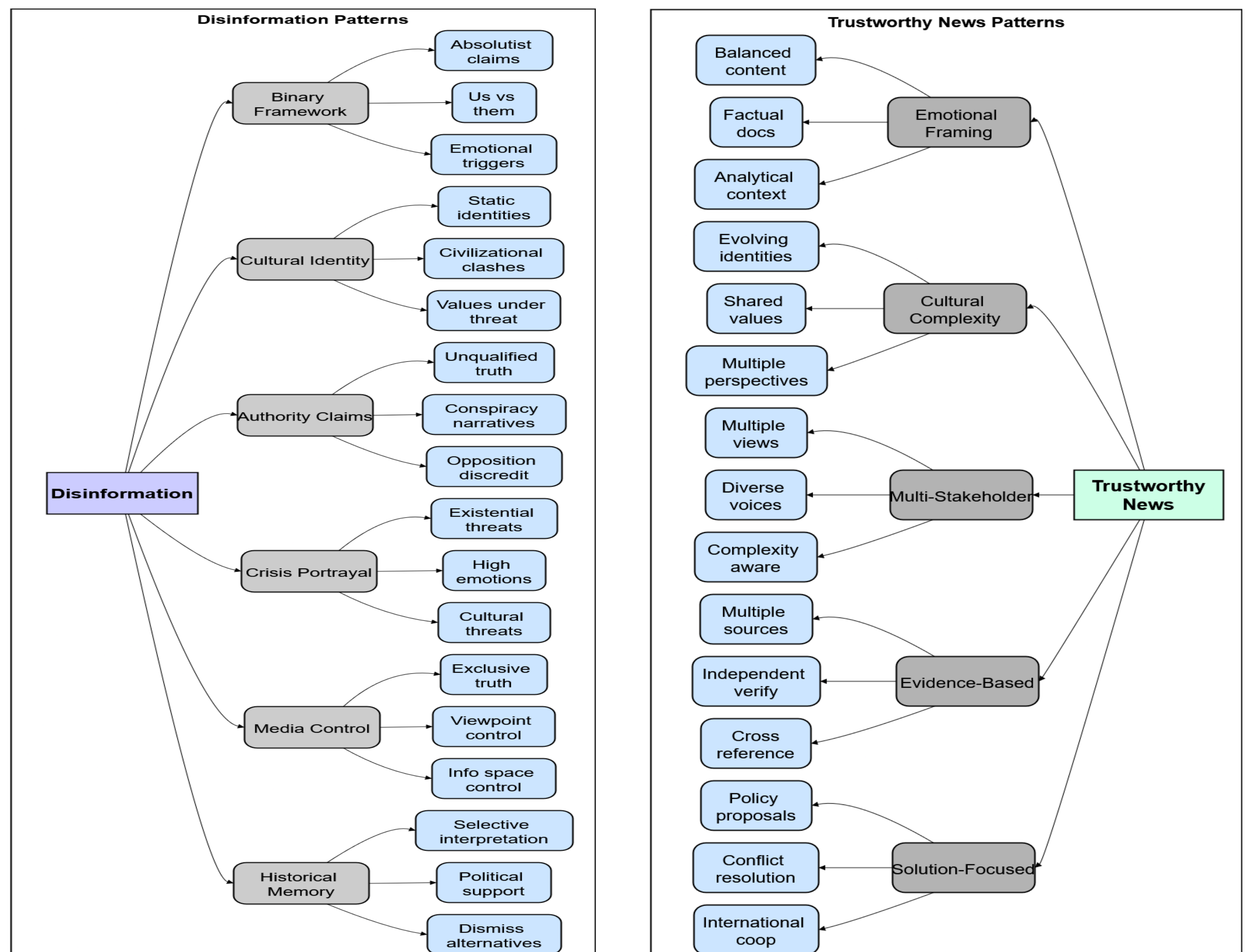
## DATA

- A subset of a multilingual **pro-Kremlin disinformation** dataset (Leite et al., 2024).
- Full texts retrieved via DiffBot API; English only.
- Final dataset:** 308 disinformation articles and 302 trustworthy ones.
- Topics** include Russia-Ukraine conflict, NATO relations, geopolitical tensions, conspiracy theories.
- Labels** based on original dataset annotations.

## METHODOLOGY



## RESULTS



## CONCLUSIONS

- A KG-based framework helped analyze narrative patterns, explore the use of sociocultural framing and emotional triggers.
- Disinformation narratives often used cognitive biases to shape information presentation.
- Trustworthy news narratives supported more constructive information engagement.
- Counter-disinformation strategies should go beyond fact-checking and address persuasive structures.

## LIMITATIONS FUTURE PLANS

- Focus on English limited cultural and linguistic generalizability.
- Data limited in size and scope.
- More robust evaluation needed.
- Temporal changes in narratives require separate analysis.
- Automated tools may miss subtle elements like irony or cultural nuances.
- Expand the size and scope of the dataset.
- Test larger selection of LLMs and different approaches for using KGs and LLMs in combination.
- Integrate automated and expert-based evaluation methods.
- Examine temporal shifts in narrative patterns.
- Improve detection of subtle cues (e.g., irony, implicit bias).