Learning Non-taxonomic Ontologies from Social Media Events

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Introduction and Motivation

A domain ontology represents a formal specification of a shared explicit knowledge related to a specific domain. Ontologies describe the relationships between objects, these relationships can be hierarchical(taxonomic) or not. Building and maintaining an ontology is a resource intensive task that requires human expertise.

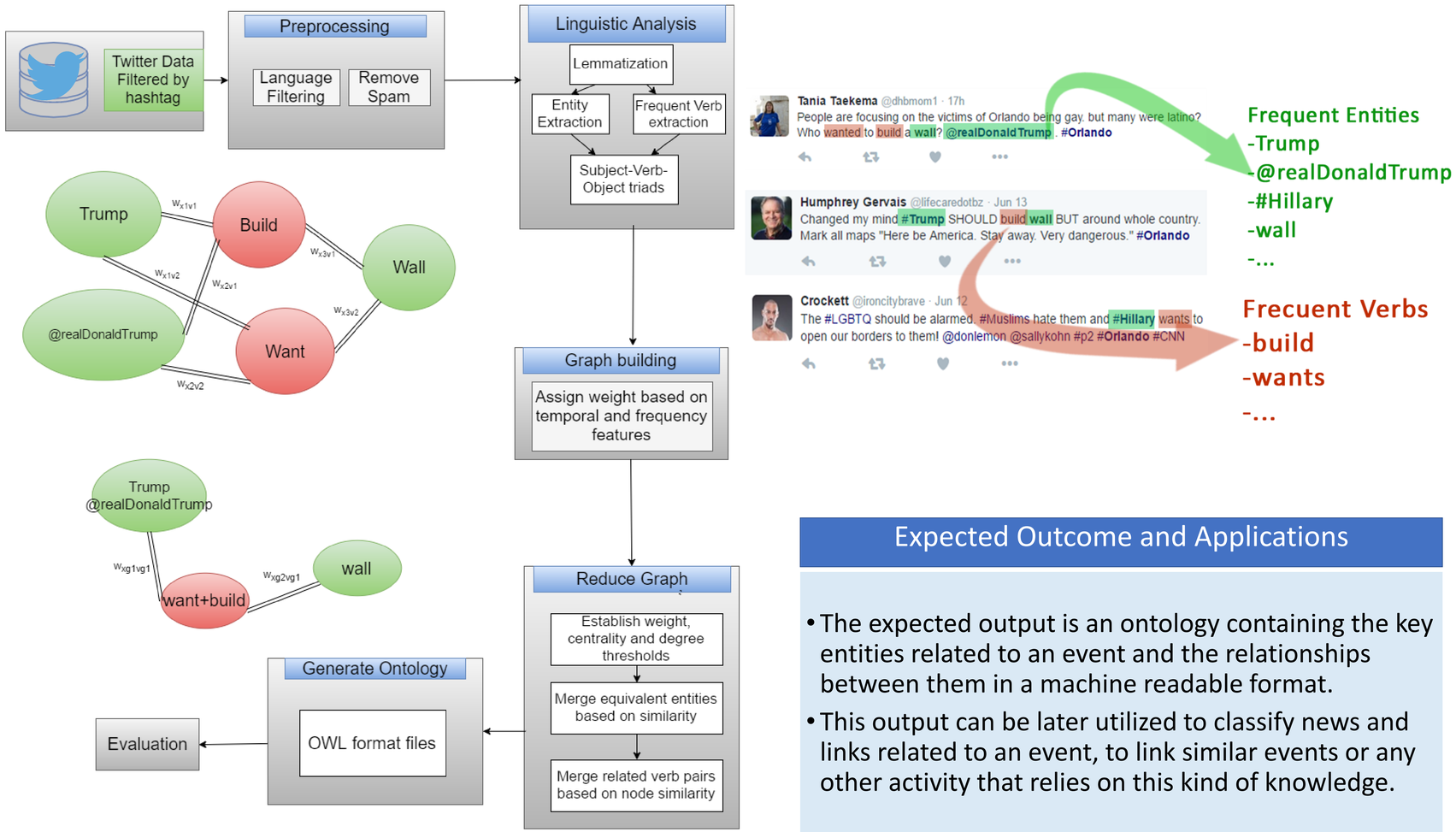
Social Media streams contain not only temporal and geolocated data, but also information written by humans about a certain topic written in natural language.

The main motivation behind this work is to make this human knowledge available in a structured way, so that it enables further reutilization and exploration.

Objective

- To extract the group of **Entities** and non-taxonomic **Relationships** from a set of tweets related to an event that provide the most information gain possible about it.
- To **merge related concepts** into the same Entity, and **merge related verbs** into the same Relationship.
- To build an ontology from the set of semantic relationships extracted.

Framework



Expected Outcome and Applications

- The expected output is an ontology containing the key entities related to an event and the relationships between them in a machine readable format.
- This output can be later utilized to classify news and links related to an event, to link similar events or any other activity that relies on this kind of knowledge.

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