

Sememe knowledge computation: a review
of recent advances in application and
expansion of sememe knowledge bases

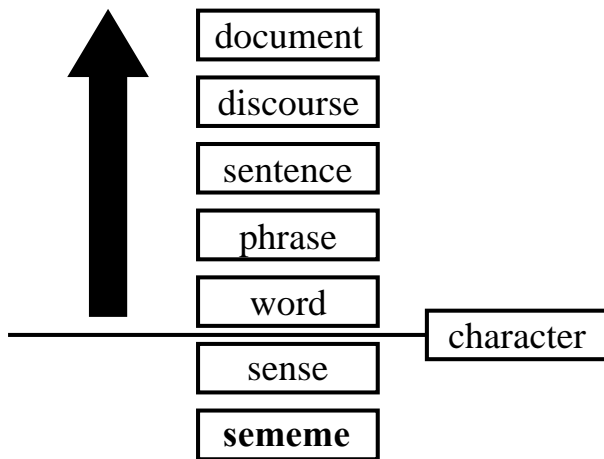
Fanchao QI, Ruobing XIE, Yuan ZANG, Zhiyuan LIU,
Maosong SUN

Frontiers of Computer Science, DOI: [10.1007/s11704-020-0002-4](https://doi.org/10.1007/s11704-020-0002-4)

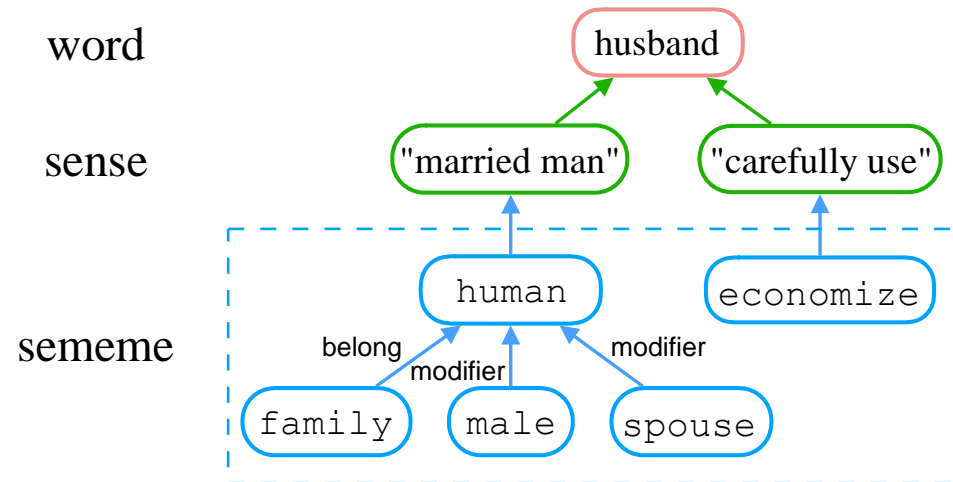
Background & Introduction

- Sememe Knowledge Computation

- A sememe is defined as the minimum semantic unit, and HowNet is the famous sememe knowledge base, which annotates words and phrases with a predefined set of sememes.
- Recently, there have been some studies on the application and expansion of HowNet



Different linguistic units in NLP



An example of sememe annotation in HowNet

Main Contributions

- Summary of recent sememe-related studies

- Application of Sememes

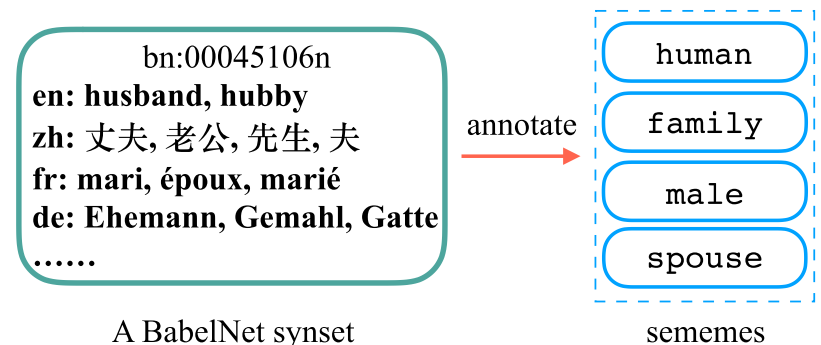
- Word representation learning
- Language modeling
- Semantic composition
- Aspect extraction, sequence modeling, adversarial attacks, et al.

- Expansion of Sememes

- Monolingual sememe prediction
- Cross-lingual sememe prediction
- Construction of a multilingual sememe knowledge base

- Future directions

- Utilizing structural information of sememes
- Using sememes in low-data regimes
- Exploiting sememes in cross-lingual tasks



A BabelNet synset

sememes

Construing a multilingual sememe knowledge base on BabelNet