Frame Semantics in Action:
A Frame-based Contrastive Text Analysis Using FrameNet

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Abstract

• Frame-based contrastive text analysis
  – The FrameNet methodology allows us to compare languages at a more detailed level than previous studies.
    • Cf. Ikegami 1991, Slobin 2004
  
  – It is, however, also necessary to cross-reference grammatical constructions, rather than analyzing the semantics of frame-bearing predicates only.
Outline

1. Background
   1) FrameNet and Japanese FrameNet
   2) Frame-semantic Contrastive Analysis of Lexical Units by Ellsworth et al. 2006

2. Analysis
   1) Claim
      2) Problems with Ellsworth et al.

3. Discussion

4. Conclusion
1. Background

1) FrameNet and Japanese FrameNet

Frame Semantics

 Corpus Data \[\longrightarrow\] Lexicon-building

- Each word is described in terms of the conceptual “frame” it evokes

Japanese FrameNet: \texttt{http://jfn.st.hc.keio.ac.jp/}

Cf. Spanish FrameNet, German FrameNet
2) Frame-semantic Contrastive Analysis of Lexical Units

- Ellsworth et al. 2006
- In scenes involving motion in English, Japanese, Spanish, and German.
  - Different information encoding patterns of the four languages
- Cf. Ikegami 1991
  - Japanese prefers to express events in terms of (change of) the whole scene rather than (change of) an entity.

Reveal detail not covered by Talmy and Slobin’s semantic typologies.
E: As we watched it the fog-wreaths *came crawling* round both corners of the house and *rolled slowly* *into one dense bank*, on which ...

Fog’s motion toward the view point  
Turbulent circular motion

J: *yagate atari wa itimenni usuboyakete*, soon area TOP all.around blur

*sidaini kiri no naka e makikom-areteitta ga, ...*  
gradually fog GEN inside GOAL engulf-PASS-PAST CONJ

“Soon the area was blurred all around and (it) was gradually engulfed inside the fog ...”

2. Analysis

1) Claim

- Ellsworth et al. is limited to contrasting **frame-bearing predicates**

In order to arrive at an accurate interpretation of a sentence, it is necessary to represent how the semantics of frame-evoking predicates interact with the semantics of the grammatical constructions within the same sentence.
2) Problems with Ellsworth et al.

E: ... said the detective ..., glancing ... at the huge lake of fog which lay over the Grimpen Mire.


J: ... keibu wa ... gurinpen no oo-zoko-nasi numa no detective TOP GEN great-bottom-less mire GEN ue ni ori [Motion_directional] teiru [Motion_directional] koi kiri o miwatasita over LOC PROG..PRESENT thick fog ACC glanced

‘.. the detective glanced at the thick fog which had fallen over the great bottomless Grimpen Mire.’

• (Transl. Ken Nobuhara. 1955. *Basukaviru ke no inu*)
E: *To this post a figure was tied*, so swathed and muffled in the sheets which had been used to secure it that one could not for the moment tell whether it was that of a man or a woman.

J: *kono hasira ni siitu o guruguru to makitukete,*
this pillar LOC sheets ACC MANNER swathed
*tyotto mita no de wa otoko ka onna ka*
little seeing NOM COP TOP man Q woman Q
*wakaranai ningen ga hitori sibarituke* [Attaching] *te atta*
tell-NEG person NOM one bind RESULT
‘To this pillar a person, who was swathed in sheets and whom one could not tell whether it was a man or woman, had been bound.’
3. Discussions

The problem of representation

• How to relate constructions to the lexical units that participate in them

• How to show, within a lexical entry, info about how a given lexical unit fits into the grammar
• Mutual dependencies of lexicon and grammar

**Lexicon** (specifying the grammatical affordances of its entries) + **Grammar** (specifying the kinds of lexical units capable of occurring in specifiable positions within grammatical constructions)

(Fillmore 2006)
Cross-references between Lexicon and Constructicon

- **Lexicon**
  - Feature/semantic type
- **Annotation**
  - Access to Lexical Entry
  - Recognition of boundaries, constituents
- **Constructicon**
  - Lexical specification/Semantic type

Based on Fillmore 2006
Annotating Lexical Units
Annotating Constructions

Perfect Construction

Form: [V Semantic type: Achievement] *te-iru*

Meaning: A state exists as a result of an event.
4. Conclusion

• In order to analyze and contrast meanings of sentences in different languages, only examining the semantics of frame-evoking predicates is not enough.

• Necessary to represent interaction between lexicon and grammar.
  – An implementation of such interactions is proposed.

• Development of “Constructicon” is called for.
Selected References


