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# Adpositional Supersenses for Mandarin Chinese

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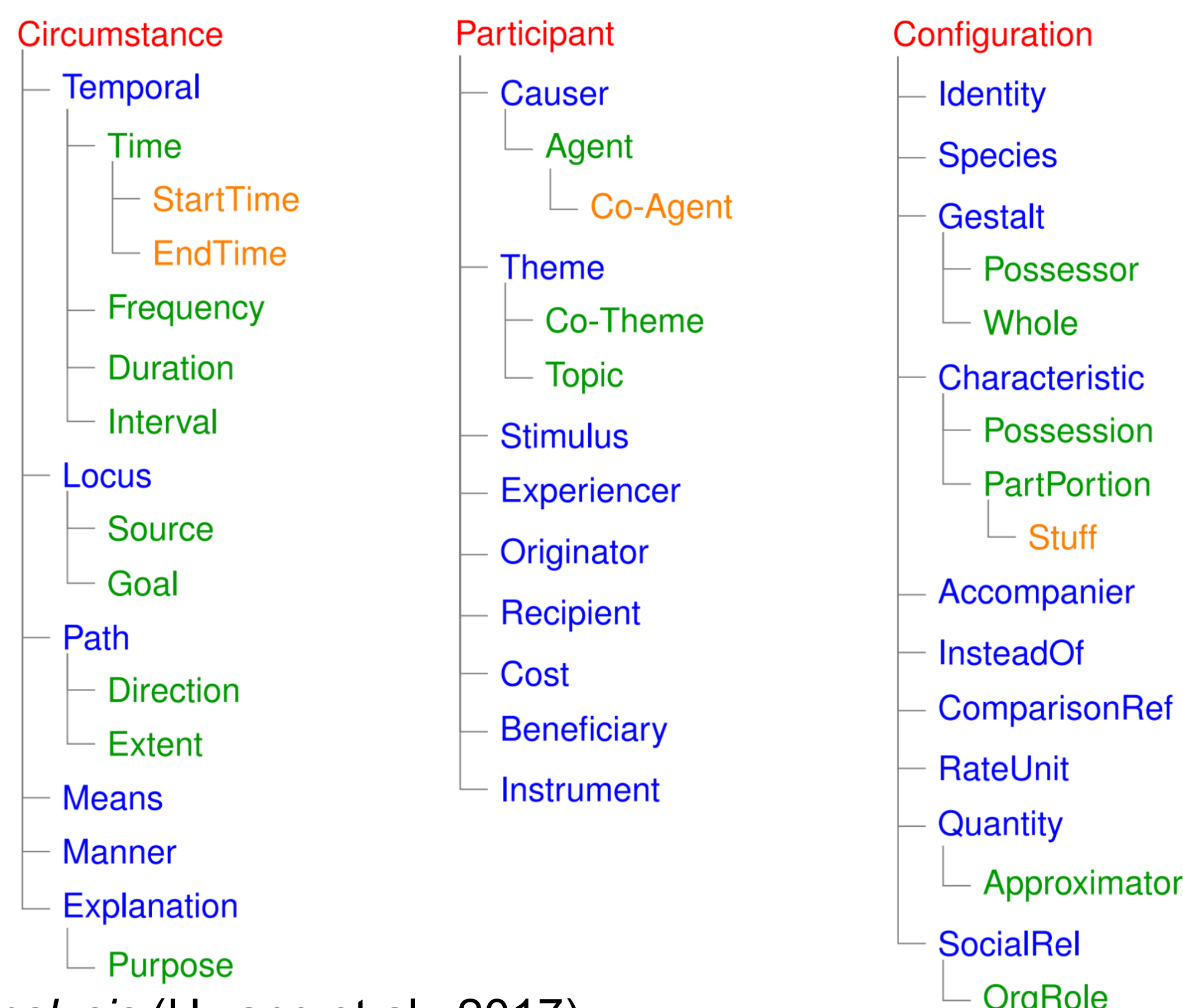


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## Introduction

- Adpositions contribute significantly to meaning

- Semantic Network of Adposition and Case Supersenses (SNACS)* (Schneider et al., 2018b)



- Construal analysis* (Hwang et al., 2017)

- FUNCTION**: lexical semantics of an adposition token
- SCENE ROLE**: the underlying relation in the surrounding context

(1) I care **about:STIMULUS→TOPIC** you.

(2) I put the book **on:GOAL→LOCUS** the table.

- Research questions

- Adaptability to Chinese adposition semantics?
- Similarities and differences between Chinese and English adpositions?

## Adposition Criteria

(3) tā **zài:LOCUS** xuéshù **shàng:TOPIC→LOCUS** yǒusuǒzuòwéi  
3SG P:at academia LC:on-top-of successful  
'He succeeded in academia.'

### Coverbs

- Precede the main predicate and introduce an NP argument (Li & Thompson, 1974)
- Annotate all pre-verbal coverbs (modification of an event), except *zai* in (4)

(4) nǐ yào de yáng jiù **zài** lǐmiàn  
2SG want DE sheep RES at inside  
'The sheep you want is in the box.'

### Localizers

- Follow a noun phrase to refine its semantic relation
- Annotate coverbs and localizers separately

## Supersense Applicability

### EXPERIENCER as FUNCTION

- English: EXPERIENCER does not seem to have any prototypical adpositions (Schneider et al., 2018a)
- Chinese: EXPERIENCER has a prototypical adposition

(5) **To:EXPERIENCER→GOAL** those who understand life, that would have given a much greater air of truth to my story.

(6) [**duì:EXPERIENCER** [dǒngdé shēnghuó de rén]  
P:to know-about life DE people  
**lái:shuō:EXPERIENCER**], zhèyàng shuō jiù xiǎndé zhēnshí  
LC:one's regard this-way tell RES seem real  
'It looks real to those who know about life.'

### Same SCENE, Different FUNCTION

- Though both English *to* and Chinese *dui* have RECIPIENT as the scene role, they have different functions

(7) You would have to say **to:RECIPIENT→GOAL** them: "I saw a house that costs \$20,000."

(8) nǐ bìxū **duì:RECIPIENT→DIRECTION** tāmen shuō: "wǒ kànjiàn  
2SG must P:to 3PL say 1SG see  
le yí dòng shíwàn fǎláng de fángzi."  
ASP one CL 100,000 franc DE house  
'You must tell them: "I see a house that costs 100,000 francs."'

### Unproductivity of Function

- Chinese adpositions: relatively limited functions

(9) **In:TOPIC** certain more important details I shall make mistakes.

(10) I should have liked to begin this story **in:MANNER** the fashion of the fairy-tales.

(11) wǒ hěn kěnéng [**zài:LOCUS** [mǒuxiē zhòngyào de xìjié]  
1SGveryprobably P:at some important de detail  
**shàng:TOPIC→LOCUS**]huà cuò le  
LC:on-top-of draw be-mistaken ASP  
'I probably made mistakes on some important details.'

## Corpus Annotation and Evaluation

- Annotated 13,000+ tokens (602 adpositions)
- 40 types of construals were identified, with 24 of the 50 supersenses appearing as scene roles and 23 as functions
- IAA on six chapters including 111 adpositions

Cohen's kappa		
SCENE	FUNCTION	SCENE + FUNCTION
.90	.93	.88

## Cross-lingual Correspondence

### Applicability of Contrual Analysis in Chinese

Role vs. Function:	Same	Total
English	178 (70%)	256
Chinese	121 (86%)	141

Table 1: Comparing the scene role and function annotations for adpositions in Ch. 1, 4, and 5.

### Analysis by Subhierarchy

Func \ Scene	CIRC	PART	CONF	Total
CIRC	88   68	22   12	4   2	114   82
PART	0   0	50   48	0   0	50   48
CONF	3   0	9   0	71   10	83   10
Total	91   68	81   60	75   12	247   140
Diagonal				209   126
Off-diagonal				38   14

Table 2: Distribution of cross-subhierarchy construals. Counts are notated as English | Chinese.

## Conclusion & Future work

- Develop new guidelines for phenomena not present in English
- Substantiate the applicability of construal analysis in Chinese
- Can further support automatic disambiguation of adpositions in Chinese

QR scan:  
e-poster  
available



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