On the semantics of comparative correlatives and adverbial comparatives in Chinese

Carlos A. Fasola (Rutgers University) joint work with Xiao Li (Queens College, CUNY) MACSIM 04 – 10 – 10

Data

- With a *yue* … *yue* construction in Chinese, when *yue* precedes a gradable predicate, a 'comparative correlative' (CC) semantics results:

(1) Ni **yue** shenqi, ta **yue** gaoxing
you angry he happy
'The angrier you are, the happier he is.'

- When *yue* precedes a non-gradable predicate, an 'adverbial comparative' (Adv Cmpr) semantics results:

(2) John **yue** pao **yue** kuai
J. run fast
'John ran faster and faster.'

- Gradability status of a predicate can be determined by *hen* test: only gradable predicates can be modified by *hen*
  - ✓hen shenqi 'very angry' *hen pao 'very run'
  - ✓hen gaoxing 'very happy' *hen chi 'very eat'
  - ✓hen duo 'very much'

Adv Cmpr vs. CC semantics

(3) John pao-de **yue** duo, **yue** kuai
J. run-de much fast
'The more John ran, the faster he went.'

- Scenario: John runs 5 miles, goes 15mph
  John runs 4 miles, goes 12 mph
  John runs 3 miles, goes 9 mph
- (3) is true in this scenario
- (2) cannot be evaluated, since temporal order not specified; if fixed to be in order shown, then false
- Hence Adv Cmpr (2) $\not\Leftarrow/\not\Rightarrow$ CC (3)
- Temporal ordering crucial for evaluating Adv Cmpr

Specifications for CC, Adv Cmpr semantics

- CC falsified if some increase in the first degree is not accompanied by an increase in the second degree
- Adv Cmpr falsified if increase in second degree not accompanied by an increase in time.

Beck (1997), Lin (2007) CC semantics

- Four crucial components:
  - *the:* $\lambda O_{<<dt><<dt>t>>}.\lambda P_{<s<dt>>}.\lambda w_{<s>}.\lambda w'_{<s>}.O(P(w))(P(w'))$
  - comparative *(mo)–er:* $\lambda P_{<dt>}.\lambda Q_{<dt>}.\exists d.\exists d'.P(d) \wedge Q(d') \wedge d < d'$
  - clause: $\lambda w_{<s>}.\lambda d_{<d>}.P(w)(d)$
  - Q_{Adv}: $\lambda R_{<s<st>>}.\lambda R'_{<s<st>>}.Q(R)(R')$
- *yue* = the(more) = $\lambda P_{<s<dt>>}.\lambda w.\lambda w'.\exists d.\exists d'.P(w)(d) \wedge P(w')(d') \wedge d < d'$
- Semantic representation of (1):
  $\forall(yue(\lambda w.\lambda d.angry(w, d, you)))(yue(\lambda w.\lambda d.happy(w, d, he))) \equiv$
  $(\lambda w.\lambda w'.\exists d.\exists d'.angry(w, d, you) \wedge angry(w', d', you) \wedge d < d') \subseteq$
  $(\lambda w.\lambda w'.\exists d.\exists d'.happy(w, d, he) \wedge happy(w', d', he) \wedge d < d')$

Our Analysis

- Orderable types – types which allow an order to be defined on their domain
- i and d are orderable types
- Verbs have a time argument, no degree argument
- Adj/Adv have a degree argument, no time argument
- *yue* can combine with either
- *yue* = $\lambda P_{<s<ot>>}.\lambda s.\lambda s'.\exists o.\exists o'.P(s)(o) \wedge P(s')(o') \wedge o <_o o'$
- Semantic representation of (2):
  $\forall(yue(\lambda s.\lambda d.fast(s, d)))(yue(\lambda s.\lambda t.run(s, t, j))) \equiv$
  $(\lambda s.\lambda s'.\exists d.\exists d'.fast(s, d) \wedge fast(s', d') \wedge d < d') \subseteq$
  $(\lambda s.\lambda s'.\exists t.\exists t'.run(s, t, j) \wedge run(s', t', j) \wedge t < t')$
- Semantic representation of (3):
  $\exists t.\forall(yue(\lambda s.\lambda d.run(s, t, j) \wedge much(s, d)))(yue(\lambda s.\lambda d.fast(s, d))) \equiv$
  $\exists t.(\lambda s.\lambda s'.\exists d.\exists d'.run(s, t, j) \wedge much(s, d) \wedge run(s', t, j) \wedge much(s', d') \wedge d < d') \subseteq$
  $(\lambda s.\lambda s'.\exists d.\exists d'.fast(s, d) \wedge fast(s', d') \wedge d < d')$

References

Beck, Sigrid: 1997, 'On the semantics of comparative conditionals', L&P 20: 229-71

Lin, Jo-Wang: 2007, 'On the semantics of comparative correlatives in Mandarin Chinese', JoS 24: 169-213