SEARCHING FOR THE SILENT HEADS

Wei-wen Roger Liao
(Academia Sinica)
FOSS-9, CCU
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Handouts are available at my website:
http://www.ling.sinica.edu.tw/pi_en.asp.htm
Recent works by Kayne (2005, 2007, 2008), Riemsdijk (2002, 2005), and Sigurðsson (2004) have argued that there are many more silent elements than previously thought (and are yet to be discovered) in natural languages, and such silent elements are key to understanding linguistic variation.
SILENT ELEMENTS

- Kayne (2005 et al):
  - a few/three/many NUMBER cars
  - a little/much AMOUNT water
  - this-HERE/ that-THERE person
  - At the age of three YEARS
  - Wat heeft Piet voor (een) TYPE wijnen uitgezocht? (What kind of wines did Pete select?)
SILENCE VARIATION

• Sigurðsson (2004):
  • **SILENCE PRINCIPLE:**
    “Languages have meaningful silent features; any meaningful feature may (in principle) be silent.”
  
  • “**SILENCE VARIATION** underlies a substantial part or even the lion’s share of language variation.”
SEARCHING FOR SILENCE

• Following these silent steps, an immediate question is how we detect these “ghosts” in syntax.
• I provide a diagnostic (but not the only diagnostic) for silent element through “entailment” (Entailment of Silent Presence; ESP)
• Two empirical cases will be examined, ‘whole’ and ‘same’ in English and Chinese.
• ‘Whole’ provides evidence that English has silent Classifiers.
• ‘Same’ provides evidence that Chinese has silent DET.
THE GHOST IN THE STRUCTURE

- **Entailment of Silent Presence (ESP)**

If a modifier $Y$ in Language A modifies an overt functional head $X$, then the presence of the same modifier $Y^*$ in Language B should entail the “silent” presence of $X^*$ in Language B:

- Language A: $[XP \ [\text{Modifier } Y] X]$
- Language B: $[X^*P \ [\text{Modifier } Y^*] X^*]$ (where $X^*$ is silent)

CASE STUDY I: WHOLE

• At first blush, the adjective *whole* in English looks like a direct NP-modifier:
  • The whole car is rusty.
  • The whole class (of students) is smart.
  • The whole time was difficult for John.
CASE STUDY 1: WHOLE

- If \textit{whole} were a NP modifier, it would be very puzzling why plural nouns \textit{cannot} be modified by \textit{whole}, especially when \textit{whole} phrases have \textbf{part-related readings}:
  - *The whole cars are rusty (cf. Every car is rusty).
  - *The whole students are tall (cf. Every student is tall).
  - *The whole hours are long (cf. Every hour is long).

- red car(s)
- big cat(s)
- sharp knife(s)
CASE STUDY I: WHOLE

- The part-related readings can be obtained when *whole* modifies singular nouns, collective nouns, and some mass nouns:

  - The whole car is rusty.
    = every part of the car is rusty
  - The whole class (of students) is smart.
    = every student is smart
  - The whole time was difficult for John.
    = every hour/minute/second was difficult
CASE STUDY I: WHOLE

- Traditional analysis in Moltmann (2005) argues that *whole* has a special semantic force to look into part-structures.

- The modifier *whole* “has the function of breaking up an individual into its actual parts and restoring it as the mere sum of those parts” (Moltmann 2005: 629)

- The ability of *whole-NP* to look into part-structures makes it behave like a mass expression (or non-integrated *whole*).
WHOLE-RELATED WHOLE

• The analysis, however, cannot explain why other instances of *whole* cannot bring about part-related readings (e.g. when *whole* modifies NP directly):
  1) [A \([_{NP} \text{big whole apple}]\)] is more nutritious than apple juice.
  2) \([_{NP} \text{Pure whole milk}]\) is better than skim milk for babies.

• NP-level *whole* does not impose co-occurrence restriction on plural nouns, either:
  1) [Whole apples] are more nutritious.
DECOMPOSING ‘WHOLE’

- Chinese may offer a clue. In Chinese, the part-related zheng ‘whole’ always modifies classifiers.

1) Na yi [CLP zheng tai] che dou hen jiu. 
   that one whole CL car all very old 
   ‘The whole car is old (= every part of the car is old).’

2) Na yi [CLP zheng duan cuiyue] dou hen nanwang. 
   that one whole CL time all very unforgettable 
   ‘The whole time was quite unforgettable.’ (=every day was...)

3) Na yi [CLP zheng ge xilie] dou hen anggui. 
   that one whole CL collection all very expensive 
   ‘The whole collection is very expensive.’ (= every item is...)
DECOMPOSING WHOLE

• Other instances of ‘whole’ in Chinese, which can modify other syntactic hierarchies, further confirm that only classifier-modifying zheng can bring about part-related readings.

➢ Wan-zheng ‘whole’ or zheng-CL-de ‘whole’ modifying NP

1) Zheng-ke/wanzheng de pingguo bijiao yingyang whole/whole DE apple more nutritious ‘A whole apple is more nutritious.’
DECOMPOSING WHOLE

- Zheng-zheng ‘whole’ modifying NumP

1) Zheng-zheng yi bai ge shibing baowei-le huanggong.
   whole one hundred CL solider surround-Asp palace
   ‘The whole one hundred soldiers surrounded the palace.’

2) *Zheng-zheng shi ge xuesheng douhen gao.
   whole ten CL student all very tall
   ‘(intended) Each of the ten students is tall.’
DECOMPOSING ‘WHOLE’

• I agree in part with Moltmann (2005) that the whole chunk of *whole*-NP is interpreted as a mass expression, which contains part-structure in its denotation (see Link 1983).

• However, departing from Moltmann’s analysis, which builds the reference to part-structure into the adjective *whole* itself, the part-structure comes from syntactic classifiers.
MASS-COUNT SYNTAX

• Adopting the assumption that mass-count distinction is attributed to classifiers with [+/- div] features (cf. Borer 2005), we can formulate the following syntax-LF rule:

Syntax: \[ \text{CLP} \left[ \text{whole/zheng CL} \right] \text{ NP} \]

LF: CL[+div] \rightarrow CL[-div] / whole/zheng ___
SILENT AMOUNT

• Kayne (2005) argues that numeral expressions contain silent NUMBER and silent AMOUNT that looks like Chinese classifiers.

• *Whole* therefore modifies a silent AMOUNT in English

  The whole car is rusty

  = The [whole AMOUNT] car is rusty
FURTHER DISCUSSION

• Whole-related *whole* modifies a mass CL, but not N:
  • The [\[NP\] big *whole* apples] were chopped up (not the sliced ones). (NP-level *whole*)
  • *The [\[NP\] big apples] were chopped up (not the small ones). (CLP-level *whole*)
  • *The [\[CLP\] whole *AMOUNT* [\[NP\] big apple-s]] were chopped up
    *clash*
BACK TO ESP

• Language A = Chinese, Language B = English
• Identical Syntax-semantic conditions:
  • Syntactic condition: not NP-modifier.
  • Semantic condition: part-related reading

• Chinese: \([\text{CLP} \ [\text{Modifier} \ zheng] \ \text{CL}]\)
• English: \([\text{CLP} \ [\text{Modifier} \ \text{whole}] \ \text{CL}]\) (where \text{CL} is silent)
CASE STUDY II: SAME

- *Same* in English appears to be an adjective, but it differs from typical adjectives:

1) a. All adjectives are *(the) same.
   b. All adjectives are (*the) equal.

2) a. I like (the/*a/*every/*some) same shirt.
   b. I like (the/a/every/some) blue shirt.

3) a. John bought the (*blue) three blue shirts.
   b. John bought the same three (*same) shirts.
CASE STUDY II: SAME

• With respect to the type/token distinction, the same in English is ambiguous between sameness in type and sameness in token:

• Sameness in **TYPE**:
  1. We like the same (type of) music.
  2. Each of us bought the same (model of) car.

• Sameness in **TOKEN**:
  1. Clark Kent and Superman are the same person.
  2. We live in the same house.
CASE STUDY II: SAME

- Chinese has two types of morphological variants of *same*, which share the same root √*tong* (‘same’): tong vs. xiang-tong/tong-yang

- *Tong* is a bound form, and *xiang-tong/tong-yang* is a free adjective. (Bound forms are used as functional items and in compounds, and are not compatible with the modificational *de*-marker)
  - Zhangsan gen Lisi shi xiang-tong-de/*tong(-de) Zhangsan and Lisi be same-DE/same ‘Zhangsan and Lisi are the same.’
**TONG VS. XIANG-TONG/TONG-YANG**

**TONG**
- Bound form (like DET) (no *de*)
- Before Num-CL (like DET)
- Incompatible with other DET
- Always definite
- License *one*-omission
- Token-referring

**XIANG-TONG/TONG-YANG**
- Free adjective (require *de*)
- Distributions like adjectives
- Compatible with other DET
- (in)definite
- Do not license *one*-omission
- Type-referring
I. SYNTACTIC DISTRIBUTIONS: TONG

- *Tong* ‘same’ always precedes Num-CL

  a) Zhangsan gen Lisi kai tong [yi tai che].
     Zhangsan and Lisi drive same one CL car
     ‘Zhangsan and Lisi drive the same car.’

  b) *Zhangsangen Lisi kai yi tong tai che.*
     Zhangsan and Lisi drive one same CL car

  c) *Zhangsangen Lisi kai yi tai tong che.*
     Zhangsan and Lisi drive one CL same car
I. SYNTACTIC DISTRIBUTIONS: XIANG-TONG

- Xiang-tong has freer distributions like other adjectives:
  #-Dem-#-Num–Cl-#-N (Huang, Li & Li 2009)

a) Zhangsan gen Lisi kai yi tai [xiang-tong de] [NP che].
   ‘Zhangsan and Lisi drive the same type of car.’

b) ?ZS gen Lisi kai [xiang-tong de] [NumP liangtai che].
   ‘Zhangsan and Lisi drive the two cars of the same type.’

c) ZS gen Lisi kai [xiang-tong de] [DP na yi tai che].
   ‘Zhangsan and Lisi drive the same car.’
II. DEFINITENESS: TONG

• *Tong*-phrases always refer to a definite expression: *Tong*-phrases cannot appear in existential sentences (see Huang 1987)

  a) You (*tong) yi ge xuesheng lai le
  have same one CL student come SFP
  ‘(intended) Here comes the same student.’

  b) Wo jiao-guo (*tong) yi ge xuesheng hen congming
  I teach-Exp same one CL student very clever
  ‘I have the experience of teaching a student who is very clever.’
II. DEFINITENESS

• *Xiang-tong/tong-yang* phrases do not display such a restriction: They can be definite or indefinite, depending on its modified NP/DP:

a) You yi ge tong-yang de xuesheng lai le have one CL same DE student comeSFP ‘Here comes a student of the same type.’

b) Wo jiao-guo yi ge tong-yang de xuesheng I teach-Exp one CL same DE student hen congming very clever ‘I have the experience of teaching a student of the same type who is very clever.’
III. COMPATIBILITY WITH D-ELEMENTS

• Although *tong* phrases refer to definite expressions, *tong* cannot occur with DET-elements (determiners, demonstratives, quantifiers):

  • Women dou xihuan (*tong) zhe/na/mei/mou we all like same this/that/every/some (*tong) yi ge ren.  
    same one CL person
    ‘We all like this/that/every/some same person.’
III. COMPATIBILITY WITH D-ELEMENTS

- *Xiang-tong* phrases can occur with DET-elements:
  - Women dou xihuan (xiang-tongde) we all like same DE zhe/na/mei/mou yi ge (xiang-tongde) ren. this/that/every/some one CL same DE person ‘(lit.) We all like this/that/every/a certain same person.’
IV. ONE-OMISSION

• On a par with the other DET-elements, *tong* may license one-omission (Li 1996):

• Women dou xihuan zhe/na/mei/mou/tong we all like this/that/every/some/same (yi) ge ren.
  one CL person
  ‘We all like this/that/every/some/the-same person.’
IV. ONE-OMISSION

- On the other hand, xiang-tong cannot license one-omission by itself:
  - Women dou xihuan xiang-tong de we all like same DE *(yi) qun ren.
    one crowd person
    ‘We all like a group of people of the same type.’
V. TYPE-TOKEN DISTINCTIONS

• *Tong* phrases always refer to the **same token**:

1) Chaoren gen Kelake shi tong yi ge ren
Superman and Clark be same one CL person
‘Superman and Clark are the same person.’

2) #Ni gen wo shi tong yi ge ren
you and I be same one CL person
‘You and I are the same person.’
V. TYPE-TOKEN DISTINCTIONS

• *Xiang-tong/tong-yang* phrases can refer to the same type:

1) Chaoren gen Bianfuxia shi (#tong) yi ge (tong-yang de) ren. Superman and Batman be same one CL same person ‘Superman and Batman are the same.’

2) Zhangsan mai-le yi liang jin-kou de paoche; Zhangsan buy-Asp one CL imported DE coupe Lisi ye mai-le yi liang xiang-tong de che. Lisi also buy-Asp one CL same DE car ‘Zhangsan bought an imported coupe; Lisi also bought the same car.’
V. TYPE-TOKEN DISTINCTIONS

1) Ni gen wo shi xiang-tong/tongyangde ren
you and I be same DE person
‘You and I are the same type of person.’

Cf. #Ni gen wo shi tong yi ge ren
you and I be same one CL person
‘You and I are the same person.’
TOWARD A SYNTACTIC ANALYSIS

• *Tong* should be analyzed on a par with the DET-elements, especially as a demonstrative of some kind.

• Following Kayne (2005), Leu (2008) proposes that demonstratives, *this* and *that*, are morphosyntactic complex units, consisting of a definite article and a silent *here/there*:
  
  • this N = [the-Agr HERE] N
  • that N = [the-Agr THERE] N
TOWARD A SYNTACTIC ANALYSIS

• Following the same route, the same N in English has the structure:
  • \([_{D} \text{ the same}] N\]
  • *\([\text{the [same N]}]\]

• In Chinese, the syntactic complex \([D_{\text{THE}} \text{ same}]\) is pronounced as tong on the surface:
  • \(tong = [D_{\text{THE}} \text{ tong}]\)
In Chinese, *tong* cannot appear with demonstratives and other DET-elements because they compete for the same positions:

- \([D_{\text{THE}} + \text{zhe} \text{‘this/here’}] = \text{zhe} \text{‘this’}\)
- \(+ \text{na} \text{‘that/there’} = \text{na} \text{‘that’}\)
- \(+ \text{tong} \text{‘same’} = \text{tong} \text{‘same’}\)

In addition, *tong* may license one-omission because it is also a DET element.

Definiteness of *tong* comes from the silent definite article.
SYNTAX-SEMANTICS MAPPING

• The analysis proposed here presents a transparent syntax-semantics mapping with respect to the syntactic NP/DP hierarchy and the semantic type/token distinction.

• It has been generally assumed that the semantic notions of type and token correspond to syntactic categories N and D, respectively (Higginbotham 1985, Vergnaud & Zubizarreta 1992, Longobardi 1994, Zamparelli 1995, Carlson 2003)
SYNTAX-SEMANTICS MAPPING

• Correspondence Law (Vergnaud and Zubizarreta 1992)
  When a DP or an NP denotes, the **DP denotes a token** and the **NP denotes a type** (each token is an instantiation of some type).
The syntactic hierarchies between *tong* and *xiang-tong* are precisely predicted by the Correspondence Law.

**The case of *tong*:**

\[
\begin{array}{c}
\text{DP} \\
\text{D} \\
\text{THE} \quad \text{tong} \quad \text{'same'} \\
\text{CLP} \\
\text{yi ge ren} \quad \text{'one CL person'}
\end{array}
\]

\[\Rightarrow \text{The instantiation of 'person' is the same}\]
SYNTAX-SEMANTICS MAPPING

• In the cases of xiang-tong:
SYNTAX-SEMANTICS MAPPING

• The fact that Chinese also reflects the type-token distinction in its syntactic hierarchy (N-D) suggests that Chinese is also a DP language (Borer 2005, Li 1998, 1999, Tang 1990, etc.)

• The mere difference between Chinese and English is that D is not pronounced in Chinese, while it is overtly pronounced in English.
BACK TO ESP

- Language A = Chinese, Language B = English
- Identical Syntax-semantic conditions:
  - Syntactic condition: Close relation to D-element.
  - Semantic condition: token-related reading

- Chinese: $\text{[DP THE [Modifier zheng]]}$
- English: $\text{[DP the [Modifier whole]]}$
OTHER D-ELEMENTS IN CHINESE

• Other D-elements can be analyzed in the same fashion, and they select the corresponding definiteness value [±def] in D:
  
  • *ling ‘other’ 另: [D[+/−def] √other] (English: another, the other)
  • *mei ‘every’ 每: [D[+def] √every] (English: THE every/both)
  • *mou ‘some’ 某: [D[−def] √some] (English: a certain)
  • *bie ‘different’ 別: [D[−def] √different] (English: a different)
GHOSTS IN THE STRUCTURE

• I have demonstrated that silent elements play important roles in comparative syntax-semantics between Chinese and English.

• A way of detecting these silent elements (or ghosts in the structures) is through ESP.
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