Syntactic Analyticity and the Other End of the Parameter
C.-T. James Huang

1. The Analytic vs. Synthetic Parameter

(1) E.T. phoned home.

(2) E.T. 打電話回家
   E.T. da dianhua hui jia.
   E.T. hit telephone back-to home

   E.T. 打電話到家裡。
   E.T. da dianhua dao jiali.
   E.T. hit telephone arrive-at home.

   E.T. 打電話給家裡。
   E.T. da dianhua gei jiali.
   E.T. hit telephone (to-give)-to home.

(3) John-wa Bill-ni denwa(-o) sita.
   John-top Bill-dat telephone(-acc) do-past

(4) 打噴嚏、打鼾、打哈欠、打油、打水、打燈、打毛線、打麻將、打字、打主意。
   da penti, da hu, da haqian, da you, da shui, da deng, da maoxian, da majiang, da zi, da zhuyi
   sneeze, snore, yawn, get gas, get water, light the lamp, do knitting, play mahjong, do
   typing, have an idea, etc.

(5) Archaic Chinese:
   吳王電越王，謂…
   Wu Wang dian Yue Wang, wei . . .
   King Wu phoned King Yue, saying . . .

(6) Inuktitut:
   tavvakiquiqarpiit
   ‘Do you have any tobacco for sale?’
   你們賣不賣煙草？

   Washakoty’tawitshahetkvhta’es’.
   ‘He made the thing that one puts on one’s body ugly for her.’
   他把她的裹身之物弄的簡簡看看的。

(8) Isolating Analytic Synthetic Polysynthetic

<table>
<thead>
<tr>
<th></th>
<th>Chinese</th>
<th>English</th>
<th>AC</th>
<th>Italian</th>
<th>Mohawk / Inuktitut</th>
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2. On parameters, analyticity and synthesis

2.1. Macroparameters and microparameters

- Ken Hale (1983): (non)-configurationality: free word order, null arguments and discontinuous constituents
- Luigi Rizzi (1982, etc.): pro drop parameter, Subjacency parameter
- Wh-movement parameter, word order (head-directionality) parameter, etc.
- Lexical parameterization hypothesis, functional parameterization hypothesis (Borer 1984, Chomsky 1995, Fukui 1995): all parameters are morphological in nature. There is one computational system and one lexicon.
- The PPT-Minimalist implementation: licensing, feature checking, “viruses” (Lasnik), +uninterpretable, +strong, etc.
- Macro-comparative vs. micro-comparative syntax; macro-parameters vs. micro-parameters. (Baker 1996, Kayne 2003, etc.)
- M. Baker 1996: reduces the non-configurationality parameter to the traditional “analysis vs. synthesis” distinction.

2.2. Baker 1996: the Polysynthesis Parameter [construed as a parameter of the morphological visibility condition on theta-role assignment, or the MVC]:

- A phrase X is visible for theta-role assignment from a head Y only if it is coindexed with a morpheme in the word containing Y via:
  - an agreement relation (pronominal affixes) [a spec-head relation]
  - a movement relationship (incorporation) [antecedent-trace relation]
- Yes: Mohawk, Nahuatl, Southern Tiwa, Mayali, Chukchee, (Mapudungun)
- No: English, Spanish, Chichewa, Japanese, Quechua, Turkish, (Kinande)

- Two levels of polysynthesis can be distinguished:
  - Polysynthesis at the functional category level: agreement
  - Polysynthesis at the lexical category: [robust, referential] incorporation

- Non-configurationality properties derived:
  - Robust pro drop: licensed by the either the inflection (Spec-head) or by antecedent (Incorporation)
  - Free word order: overt arguments as adjuncts binding null pronouns
  - Discontinuous constituents: (a) adverbs ‘a lot’ (beaucoup vs. beaucoup de), or (b) movement (of XP determiners)
  - “Discontinuous constituency” is in fact not a true property of polysynthesis. In fact, the very meaning of synthesis is continuity. Discontinuity is a property of analyticity.
  - Polysynthesis is only one source of (robust) Pro Drop. Extreme analyticity is the other source, as we know from Chinese. [Huang 1984, 89; Safir and Yaeggli 1989]
3. Analyticity and Synthesis of Lexical Categories

A. B. C. D.

3.1. The light verb ‘parameter’: the existence of simplex causative, unergative, and transitives. (As shown above.)

- Some examples of Archaic Chinese lexical categories: very productive incorporation to light verbs CAUSE, TAKE, BE, USE, etc.
  - xiao 小: small, make small, consider small
  - hao, e 好 / 惡: good/bad, like/dislike [consider to be good/bad]
  - shou 受: give, receive; jia 假: lend, borrow
  - si 死: die, die-for (e.g., si guo 死國 ‘die for the country’), die-at (e.g., si Changan zang Changan 死長安、葬長安)
  - fan 稲: rice, give rice (feed one with rice) 有一母見信肌，飯信。
  - yi 衣: cloth, clothe (vi and vt); 食 shi: food, eat, feed (禮記：問人之寒則衣之，問人之肌則食之，稱人之美則爵之；孟子：治於人者食人，治人者食於人。)
  - wang 王: king, make-king, consider-king (左傳：爾欲吳王我乎？)
  - you 友: friend, befriend; zi 子: son, take-as-son; etc. (荀子：友風而子雨)

(It is generally said that, for most cases, there were appropriate derivational affixes of sorts, which have since been lost.)

- Modern Mandarin: almost all these lexical categories have their simplest (pure, “root”) meanings only.

3.2. Simplex vs. compound vs. phrases

(9) Synthetic Analytic
English: English:
Enter, exit, etc. come in, go out, etc.

(10) Classical Chinese: Modern Chinese:
ru ‘enter’ jinlai ‘come in’
chu ‘exit’ chuqu ‘go out’
po ‘break’ dapo ‘da-break’
po chuang er ru dapo chuangzi jinlai.
‘break window and enter’ ‘hit-break window and come in’
(11) Many so-called verb-object compounds are actually V-O phrases still. The position of the perfective aspect le shows that these are phrases:

- chang ge ‘sing’ > chang-le ge ‘sang’
- bo pi ‘peel’ > bo-le pi ‘peeled’
- tiao wu ‘dance’ > tiao-le wu ‘danced’

(12) Modern Mandarin lacks accomplishments: only states, activities and achievement. Can be quantified by ‘3 times’ (time = classifier of event), or ‘3 hours’ (hour = measure word of event). Atelic verbs = Mass events

- #John wrote a letter yesterday, but did not finish it.
- Zhangsan zuotian xie-le yi-feng xin, keshi mei xie wan.
- #Zhangsan zuotian xie-wan-le yi-feng xin, keshi mei xie wan.

(13) Explaining the clustering of distinctive properties
- Lexical decomposition
- Head movement triggered by empty ['strong'] light verbs
- Chinese as a Davidsonian language par excellence

4. The Analyticity and Synthesis of Functional Categories

A. B. C. E. F.

→ Clustering of distinctive properties

(12) a. John saw nobody. (synthetic: nobody)
   b. John didn’t see anybody. (analytic: not . . . anybody)

- Chinese does not have the equivalent of nobody (alternatively: no postverbal nobody. similar to Norwegian, as in Christensen 1991; cf. Kayne 1998). It only has the discontinuous (analytic) strategy.

(13) a. They criticized each other.
   b. They each criticized the other.

- Chinese does not have each other as a constituent, but does have the discontinuous pattern.

(14) a. They each bought three books.
   b. They bought three books each.

- Chinese does not have binominal each. The Chinese distributive adverb ge has the properties of the binominal each construction, but it is not adjacent to the “share” phrase. (cf. Safir and Stowell 1987)
- tamen ge mai-le liang-ben shu. ‘they each bought 2 books’
  they each bought two-CL books
- *ta ge mai-le liang-ben shu. (cf. *he bought 2 books each.)
  lit. ‘he ge bought 2 books.’
- *tamen ge mai-le wo-de shu. (cf. *they bought my books each)
- *tamen ge zou-le. (cf. *they left each)

<table>
<thead>
<tr>
<th>V1L</th>
<th>V2L</th>
<th>VCL</th>
<th>VCR</th>
<th>V2R</th>
<th>V1R</th>
</tr>
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<tbody>
<tr>
<td>Irish</td>
<td>Austronesian</td>
<td>German</td>
<td>Norwegian</td>
<td>French</td>
<td>English</td>
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</table>

Japanese: Last year John often Bill visited.
Chinese: Last year John often visited Bill.
English: Last year John often visited Bill.
French: Last year visited John often Bill.
German: Last year visited John often Bill.
Irish: Visited John last year often Bill.

• *Roughly*: the more “head-initial” the more synthetic, the more “head-final” the more analytic.
• Familiar story: The more synthetic means the more “virus” on a functional head (or the verb itself) which triggers (upward movement).

→ Head parameter variations follow from lexical differences; variations in word order (i.e., the ‘head-directionality’ parameter) then consequences of the analytic-synthetic difference

(16) a. **What** did you buy?
b. Ni mai-le **shenme**? ‘You bought what’

• Wh-movement languages are languages with synthetic interrogative words (Tsai 1994: what, whatever, somewhat; how, however, somehow)
• Wh-in-situ languages are those whose wh-words are discontinuous constituents. (A question wh-word is the discontinuous \( [Q \ [\ldots \quad wh \ldots ] ] \))

→ Hence the ‘wh-movement’ parameter is a consequence of the synthetic-analytic parameter. (Reduced to the nature of lexical/functional elements.)

(16’)* Wh-the-hell (cf. Huang and Ochi 2004)
a. What the hell did you buy?
b. ni **daodi** mai-le shenme?
   You daodi buy-Perf what

What the hell did you buy?

• English uses the continuous strategy
• Chinese uses the discontinuous strategy
Explaining the clustering of distinctive properties
- Functional features, uninterpretable, strong features, checking, movement
- Chinese as a virus-free, healthy language
- As for the origin of the viruses: historical development . . .


- Conceptually speaking
  - Light verb = verbal classifiers $\rightarrow$ nominal classifiers = light nouns
  - YR Chao 1958, etc. Classifier = Auxiliary noun $\rightarrow$ light verb = aux verb
  - Chinese verbs are mass verbs (atelic), hence accomplishments must be expressed with a light verb or an Activity-State compound, etc. Chinese nouns are mass nouns, hence they need a classifier when you want to count them.
  - Possible hypothesis: all Ns are mass, English has covert classifier and Chinese has overt classifier. Borer 2005. (See 17-18) [English N is mass N under cover classifier; English V is atelic under covert CAUSE, DO etc. Chinese N is mass N under overt classifier, and Chinese V is atelic under overt CAUSE, DO, etc.]
  - The English-Chinese typological difference should come out from a parameter of lexicalization.

- Empirically speaking
  - In typological terms (caveat) (but the correlation may not be always complete, as we know from Greenberg’s implicational universals, indicating that other factors may complicate the picture.)
  - In historical terms (See 19-20)

(17) Based on Borer (2005)
The concurrent rise of overt light verbs and classifier in the history from Archaic to Modern Chinese

I. **Pre-Archaic** (from oracle bone Inscriptions; 1700-1100 BC); Shang dynasty

II. **Early Archaic** 金文 (bronze inscriptions; 1100-800 BC), 詩經 (Book of Poetry; 1100-600 BC) Western Chou dynasty

III. **Late Archaic** (CC par excellence; 論語, 左傳, 孟子, 荀子, 韓非子 Lunyu, Zuo Zhuan, Mengzi, Xunzi, Han Feizi 500-300 BC)

IV. **Pre-Medieval Chinese** (Han Dynasty): 世說新語 (SSXY, Yiqing Liu, 403-444AD)

V. **Early Medieval Chinese** (Six Dynasties 220-589 AD) The Dunhuang Transformational Texts (850-1025)

(19) Facts from Peyraube (1994):

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Period:</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
</tr>
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<tbody>
<tr>
<td>A  [Num + N ]</td>
<td></td>
<td>Ok</td>
<td>Ok</td>
<td>86%</td>
<td>Ok</td>
<td>300</td>
<td>?</td>
</tr>
<tr>
<td>B  [N + Num]</td>
<td></td>
<td>Ok</td>
<td>Ok</td>
<td>3%</td>
<td>?</td>
<td>10</td>
<td>***</td>
</tr>
<tr>
<td>C  [N1 + Num + N2], N2 = N1</td>
<td></td>
<td>Ok</td>
<td>Ok</td>
<td>??</td>
<td>0</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>D  [N1 + Num + MW]</td>
<td></td>
<td>Ok</td>
<td>Ok</td>
<td>8%</td>
<td>?</td>
<td>20</td>
<td>***</td>
</tr>
<tr>
<td>E  [N + Num + CL]</td>
<td></td>
<td>*</td>
<td>??*</td>
<td>??*</td>
<td>Ok</td>
<td>?</td>
<td>7%</td>
</tr>
<tr>
<td>F  [Num + MW + N ]</td>
<td></td>
<td>*</td>
<td>*</td>
<td>Ok</td>
<td>Ok</td>
<td>20</td>
<td>Ok</td>
</tr>
<tr>
<td>G  [Num + CL + N ]</td>
<td></td>
<td>*</td>
<td>*</td>
<td>?</td>
<td>20</td>
<td>63%</td>
<td></td>
</tr>
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- During VI (late Medieval, early Tang): Of all quantified NPs, 70% take CL, of which 7% was postnominal, and 63% pronominal.
The postnominal uses remain in sporadic use for the “list” reading

The most modern Mandarin forms have their forms fully born (if not) at the end of late Medieval (850-1025). This concludes a 1000-year development from early Han.

Peyraube: the rise of $E \rightarrow G$ may be due to the loss of Sargart’s (1993) plural infix –r-.

The development of light verbs and the development of co-verbs (ba, gen, lian, etc., which in current research have also been analyzed as light verbs) occurred alongside the rise of the classifier system: from Medieval Chinese to the early Tang dynasty.

- AC: highly synthetic, fairly inflectional.
- Tang: fully analytic.
- Modern Mandarin: has since acquired some degree of synthesis (grammaticalization). [Northern Chinese]

(20) (Proposed) Mechanism and Cause

- AC $\rightarrow$ Med C: the rise of Analyticity $\rightarrow$ V became “pure” [e.g., atelic] without virus (loss of prefix or suffix $\rightarrow$ V to v movement stopped $\rightarrow$ VP remnant movement also stopped $\rightarrow$ hence V occurring near the end $\rightarrow$ birth of overt light verb.

- In parallel fashion, Analyticity $\rightarrow$ N became “pure” [i.e., mass nouns, possibly due to loss of infix –r- (cf. Sagart 1993)], etc. $\rightarrow$ loss of N movement because the N has no [+strong, uninterpretable features to check] $\rightarrow$ hence head-final pattern $\rightarrow$ hence the birth of overt CL. [MW was always overt.]

- The change from D $\rightarrow$ F (the relocation of measure phrase, which always existed, to pre-nominal position): may be parallel to the relocation of the postverbal all-purpose postverbal PP (yu + NP). This might be due to the parallel loss of remnant VP movement (which produce post-verbal PP) and remnant NP movement (which gave rise to postnominal modifier QPs).

Interim summary:

Analyticity vs. synthesis may be seen at 3 different levels:
- Lexical categories (as shown above)
- Functional categories (as shown above)
- Argument structure (to be shown below)
  - Robust syn-sem mismatches
  - Unselectiveness of subjects and objects
  - Robust [“radical”] pro drop
  - Resultatives and causativization of unergatives, etc.