

**“First comes, First Interpreted”
and
A Performance-based Assessment for Advanced L2 (Japanese)
Parser Development**

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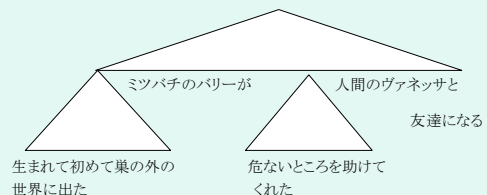
Contents

1. Why the strategy, ‘first comes, first interpreted’?
2. What can be a unit of ‘first comes, first interpreted’? Why?
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1. Why ‘First come, First Interpreted’ strategy?

まずは先月から公開中の「ビー・ムービー」。ドリームワークス製作のCGアニメです。生まれて初めて巣の外の世界に出たミツバチのバリーが、危ないところを助けてくれた人間のヴァネッサと友達になるが、スーパーの棚を見て「自分たちの集めた蜜が盗まれ売られている」と知り、人間相手に蜜を返すよう裁判を起こす、という物語。

生まれて初めて巣の外の世界に出たミツバチのバリーが、危ないところを助けてくれた人間のヴァネッサと友達になる



- The strategy can explain why native speaker’s parser falls in a “garden path (GP)” trap when processing the following sentences:

English GP example:

The horse raced past the barn fell.

- i) First parse: The horse raced past the barn→ crash!
- ii) Second parse: The horse [(that was) raced past the barn] fell.

Japanese GP example:

Takeshi-ga aidoru kashu-o kakushita

Takeshi-Nom idol singer-Acc. hid/hidden

kamera-de totta.

(Mazuka & Itoh 1995)

camera-with took

たけしがアイドル歌手を隠したカメラで取った。

- i) First parse: Takeshi hid an idol singer → crash!
- ii) Second parse: Takeshi took (a picture of) an idol singer with hidden camera.

Another piece of evidence: Center Embedded Sentences (Difficult to process: Over the limitation of the short-term memory; Kimball 1973; Kang 1993, 2006; Lewis 1996, etc.)

Eng: *The rat the cat the dog chased bit ate the cheese.*

JP:

明子がジョンが和子が一日かかって書いた手紙を破って捨てた川で事故にあった。

Akiko-ga [john-ga [kazuko-ga ichinichi-kakatte kaita] Akiko-Nom
Jon-Nom kazuko-Nom taking-all-day wrote

tegami-o yabutte suteta] kawa-de jiko-ni atta
letter-Acc tear-&-threw river-at accident-Dat happened

'Akiko had an accident at the river where John threw away the letter that Kazuko wrote taking whole one day.'

Eng: *The cat the dog chased bit the rat.*

JP:

ジョンが和子が一日かかって書いた手紙を破って捨てた。

Non-Center-Embedded sentences:

Eng: *The dog chased the cat that bit the rat that ate the cheese.*

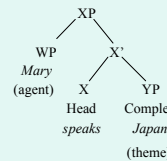
JP : 和子が一日かかって書いた手紙をジョンが破って捨てた川で明子が事故にあった。

kazuko-ga ichinichi kakatte kaita tegami-o john-ga yabutte suteta kawa-de jiko-ni atta.

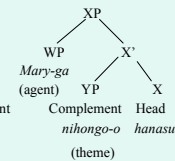
X-Bar Theory: head parameter

Argument Structure: predicate & its argument(s)

English: head-initial language



Japanese: head-final language



A(rgument) S(tructure) of *speak* = {*speak* (agent (theme))};
Lexicon/mental dictionary: *speak* is a transitive verb

Let's look at GP in terms of the center embedded

English GP example:

The horse raced past the barn fell.

i) First parse (Non-center embedded: Minimal AS principle):

[The horse raced past the barn]->crash!

|-----AS1-----|

ii) Second parse (center embedded: Maximal AS principle):

The horse [(that was) raced past the barn] fell.

|-----AS1-----|

|-----AS2-----|

Japanese GP example:

Takeshi-ga aidoru kashu-o kakushita

Takeshi-Nom idol singer-Acc. hid/hidden

kamera-de totta. (Mazuka & Itoh 1995)

camera-with took

i) First parse: Takeshi hid an idol singer →crash!

takeshi-ga aidoru kashu-o kakushita (Minimal AS principle)

ii) Second parse: Takeshi took (a picture of) an idol singer with a camera he hid.

Takeshi-ga idoru kashu-o kakushita kameta-de totta

|-----AS1-----|

|-----AS2-----|

2. What can be a unit of ‘first comes first interpreted’? Why?

- Parsing (listening & reading): Comprehension units (cf. “sense units” in Selkirk (1984))
- What are comprehension units? They are prosodic phrases, but not syntactic phrases
A prosodic phrase does not always correspond to a syntactic phrase
- What can be in a prosodic phrase?
 - an argument (obligatory or non-obligatory) of an argument structure (AS),
 - an incomplete or complete AS.
- Argument, predicate, or a whole AS can be a comprehension unit.

- First *prosodic phrase* comes, first interpreted.
Why? Because a prosodic phrase is a comprehension unit.
- For advanced level: ‘First **AS** comes, first interpreted.’

Without good L2 listening comprehension skill, one can not expect to develop high reading comprehension skill.

(cf. “silent reading” in Fodor (2002, 2003))

In other words, the development of good listening comprehension skill must occur before the development of high reading comprehension skill.

3. How is a unit interpreted/processed?

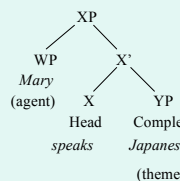
3.1. Branching direction: Right or Left

English: Right Branching

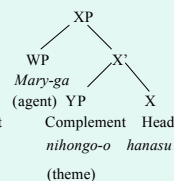
Japanese: Left Branching

3.2 X-Bar Theory: head parameter: inside of X’; head and Complement

English: head-initial language



Japanese: head-final language



A(rgument) S(tructure) of *speak* = {*speak* (agent (theme))}
Lexicon/mental dictionary: *speak* is a transitive verb

Contrast AS closure between Top-down and Bottom-up parsing mechanisms

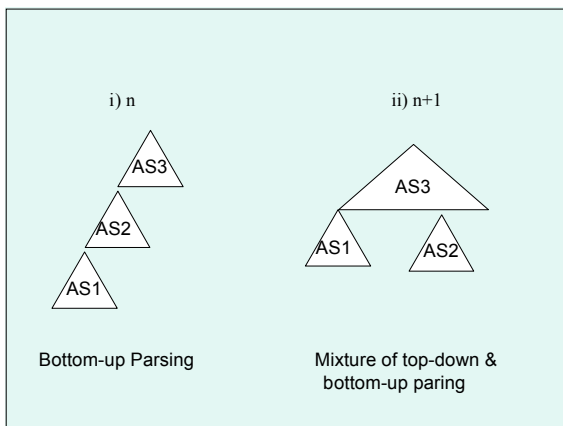
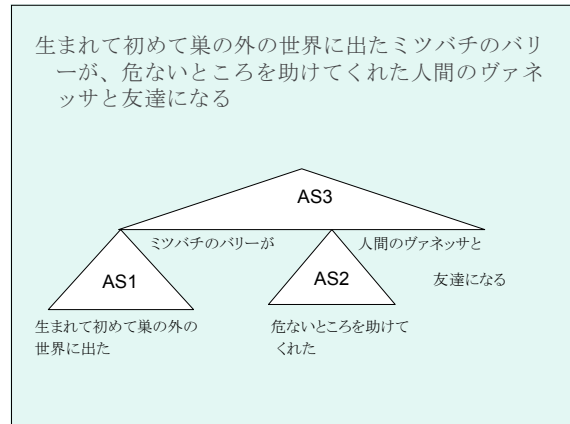
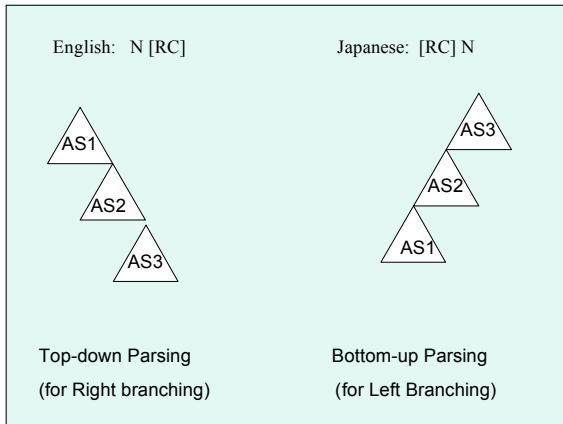
Eng: The dog chased the cat that bit the rat that ate the cheese.

JP : 和子が一日かかって書いた手紙をジョンが破って捨てた川で明子が事故にあった。
kazuko-ga ichinichi kakatte kaita tegami-o john-ga yabutte suteta kawa-de jiko-ni atta.

Prosodic phrases in terms of AS

Eng: [The dog chased the cat] [that bit a rat] [that ate the cheese]
AS1 AS2 AS3

JP: [kazuko-ga/ ichinichi kakatte kaita tegami-o] [john-ga/yabutte suteta kawa-de]
AS1 AS2
[akiko-ga jiko-ni atta]
AS3



3.4 Conscious learning vs. Non-conscious learning

- Conscious Learning of vocabulary, idiomatic expressions & L2 grammar

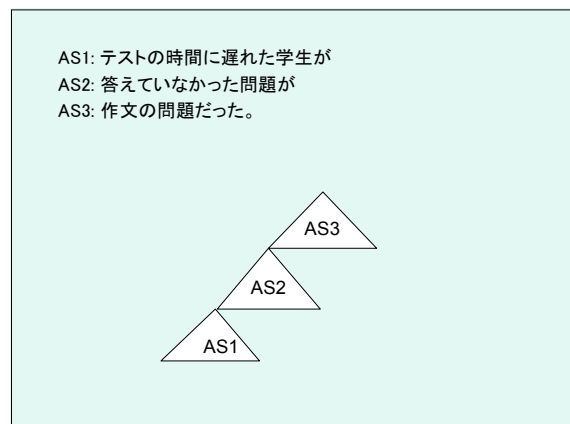
Beginner's levels ←---- Advanced levels -----→ Native Speakers
 Conscious learning ←----- Less-conscious -----→ Non-Conscious/Automatic

- Non-conscious learning regardless of learning L1 or L2: learning *syntactic processing* mechanisms (how to *parse* input sentences); this is something we can not control

4. What kind of sentence structures is suggested to use for performance-based Assessment of the development of L2 (Japanese) advanced parser?
 * See the appendix, too.

テストの時間に遅れた学生が答えていなかった問題が作文の問題だった。

- AS1: テストの時間に遅れた学生が
- AS2: (学生が) 答えていなかった問題が
- AS3: (問題が) 作文の問題だった。



5. What kind of performance assessment is recommended?

- Dynamic assessment (Poehner 2007)
- Technology: something like power point

Dynamic Assessment (Poehner 2007) :

- According to Poehner (p. 325) he “limit the use of the term DA to those approaches that follow Vygotsky’s (1998) methods of providing mediation in order to reveal the depth of learner’s abilities and simultaneously act as a catalyst for their further development.”
- Initial DA session is used as a diagnostic of learner’s abilities and later repeated in order to track developmental changes over the time.
- DA has the method known as transcendent (or transfer) by mediation of an assessor or instructor to help a student with more complicated tasks by applying what he/she has learned.

テストの時間に遅れた学生が

答えていなかった問題が

作文の問題だった。

After showing each AS of a sentence in each screen, orally ask questions to check how much each student has comprehended it.

Examples of Question:

- (1) どんな学生についての文でしたか。
- (2) その学生達は何をしたんですか／しなかったんですか。

Next task (n+1 level)

Example sentences:

- (1) 雪の中を歩いて来た男がこわれた家に住んでいる。
- (2) タクシーが拾えなかった母親が歩き疲れた子供をおんぶした。
- (3) 日本語ができる学生が数学ができない学生より多かった。
- (4) 商店街で迷子になった子供がパトロールしていた警官に補導された。

Conclusion

- (1) The first prosodic phrase comes first interpreted to *effectively use the capacity of short-term memory*.
- (2) Why a prosodic phrase? Because they are *comprehension units*.
- (3) What needs to be learned is L2 processing mechanisms by human parser (human parser learning theory)
- (4) Vocabulary and conscious L2 grammar learning is crucial to make parser operate effectively. (comprehension of inputs means that parser processed them correctly.)

- (5) One of the criteria to determine acquisition order may be the number of center-embedded clauses in a sentence;

A sentence without any center-embedded clause is easier to process than that with an embedded clause.

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Thank you!

Any questions?