On the relation between syntactic and phonological clauses in Japanese

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2019

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On the relation between syntactic and phonological clauses in Japanese

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2019-12-02, NINJAL ICPP 2019

In this talk…

- The syntax–prosody mapping at the clause-level in Japanese
  - Theoretically motivated, but empirically much less frequently attested than the phrase-level mapping
  - No previous systematic investigations of embedded clauses
- Experiment
  - No evidence for intonational phrase boundaries at the edges of embedded clauses.
- Discussion — 2 possible explanations
  - Interaction with prosodic wellformedness constraints
  - No syntax–prosody mapping at the clause-level

Background

Syntax–Prosody Mapping Hypothesis (SPMH)

Syntax–Prosody Mapping Hypothesis

- Two theories of prosody / the syntax–prosody mapping
  - Prosodic Adjunction Theory (Itô & Mester 2007, 2012, 2013)
  - Match Theory (Selkirk 2011)
- Three distinctive prosodic categories above feet
  - Phonological clause (**PClause**, ι) **= Intonational Phrase**
  - Phonological phrase (**PPhrase**, φ)
  - Phonological word (**PWord**, ω)

(terms are from Itô & Mester 2013)

Syntax–Prosody Mapping Hypothesis

- Two theories of prosody / the syntax–prosody mapping
  - Prosodic Adjunction Theory (Itô & Mester 2007, 2012, 2013)
  - Match Theory (Selkirk 2011)
- The (language-universal) correspondence between prosodic and syntactic categories (Syntax–Prosody Mapping Hypothesis, SPMH)
  - PClause ⇄ syntactic clause
  - PPhrase ⇄ syntactic phrase
  - PWord ⇄ syntactic words

Syntax–Prosody Mapping Hypothesis

(Tokyo) Japanese

- Many studies on the syntax–prosody mapping at the phrase-level (Ishihara 2015 for an overview).
  - McCawley 1968, Poser 1986, Pierrehumbert & Beckman 1988, Selkirk & Tateishi 1988, 1991, Kubozono 1993, Sugahara 2003, Ishihara 2016
- Two mapping theories
  - End-based theory (Selkirk & Tateishi 1991)
    - Left edges of syntactic phrases (XPs) correspond to left edges of PPhrases.
  - Branching-based theory (Kubozono 1989, 1993)
    - Left edges of syntactic phrases (XPs) correspond to the location of the f0-boosting phenomenon called Metrical Boost.

Syntax–Prosody Mapping Hypothesis
(Tokyo) Japanese

Kubozono (1993) compared 4 different phrase structures:

a. [[na'okono a'nino] [ao'i eri'maki]] **a. [[A B][C D]]**
Naoko-GEN brother-GEN blue muffler
'Naoko's brother's blue muffler'

b. [ma'rikono [o'okina [ao'i eri'maki]]] **b. [A [B [C D]]]**
Mariko-GEN big blue muffler
'Mariko's big blue muffler'

c. [[a'yakono [me'nno eri'makino]] iromo'yoo] **c. [[A [B C]] D]**
Ayako-GEN cotton-GEN muffler-GEN design
'design of Ayako's cotton muffler'

d. [ao'i [[yu'mikoga a'nda] eri'maki]] **d. [A [[B C] D]]**
blue Yumiko-NOM knit(past) muffler
'the blue muffler Yumiko knit' (Kubozono 1993: 211)

Syntax–Prosody Mapping Hypothesis
(Tokyo) Japanese

Kubozono (1993) compared 4 different phrase structures:

- There is a larger F0-rise (Metrical Boost, MB) when there are more than one XP boundaries.

a) [[A B][C D]] (MB)
b) [A [B [C D]]] (MB MB)
c) [[A [B C]] D] (MB)
d) [A [[B C] D]] (MB)

(Kubozono 1993: 212)

Syntax–Prosody Mapping Hypothesis
(Tokyo) Japanese

(Tokyo) Japanese:

- Many studies on the syntax–prosody mapping at the phrase-level (Ishihara 2015 for an overview).
  - End-based theory (Selkirk & Tateishi 1991)
  - Branching-based theory (Kubozono 1989, 1993)

However, whether there is the level of the PClause or not is not a settled issue.

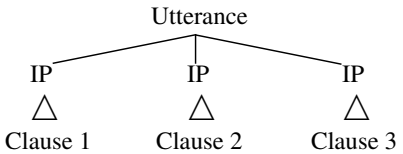
The PClause in Japanese

The PClause in Japanese

- What earlier analyses have in common:
  1. Two levels (below utterance)
     - minor phrase < major phrase (McCawley 1968, Poser 1984, Kubozono 1993)
     - accentual phrase < intermediate phrase (< utterance) (Pierrehumbert & Beckman 1988)
     - accentual phrase < intonation phrase (Venditti 2005, Maekawa et al. 2002; Venditti et al 2008)
     - accent component < phrase component (Fujisaki & Sudo 1971, Fujisaki & Hirose 1984)
  2. No level corresponding to intonation(al) phrases proposed for English and other languages (Beckman & Pierrehumbert 1986)

The PClause in Japanese

- The only exception: Kawahara & Shinya (2008)
  - A prosodic level larger than a major phrase and smaller than utterance, i.e. intonational phrase
  - minor phrase < major phrase < intonational phrase < utterance



(Kawahara & Shinya 2008:64)

Previous empirical studies

Previous empirical studies

- Relative clauses (Uyeno et al. 1979; Kubozono 1993)
- Coordinated main clauses (Kawahara & Shinya (2008)
- Embedded clauses (Ishihara 2007)

None of these studies can be taken as the empirical confirmation of the clause-level mapping.

Previous empirical studies
Relative clauses

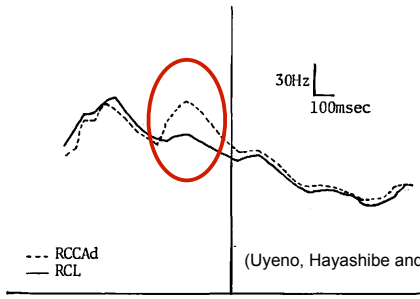
Uyeno, Hayashibe and Imai 1979

a. [[ototoi **koronda]** otona-ga waratta]
day.before. fell adult-NOM laughed
yesterday
'The adult who fell the day before yesterday laughed.'

b. [ototoi **[koronda]** otona-ga waratta]
'The adult who fell laughed the day before yesterday.'
(Uyeno, Hayashibe and Imai 1979: 184)

Previous empirical studies
Relative clauses

Uyeno, Hayashibe and Imai 1979



(Uyeno, Hayashibe and Imai 1979: 185)

Previous empirical studies
Relative clauses

Can this be evidence for the clause-level SP-mapping?

- Relative clauses are always embedded in a DP.
- In Japanese, RCs are syntactically parallel to other nominal modifiers (e.g., adjectives)
  - *omosiro-i hon*
    'interestin-NPAST book' / 'book that is interesting'
  - *omosiro-katta hon*
    'interesting-PAST book' / 'book that was interesting'

The phonetic effects found at the left edge of the RCs may be attributed to the left edge of the DPs that contain it.

Previous empirical studies
Relative clauses

Kubozono (1993) compared 4 different phrase structures:

a. [[na'okono a'nino] [ao'i eri'maki]] **a. [[A B][C D]]**
Naoko-GEN brother-GEN blue muffler
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blue Yumiko-NOM knit(past) muffler
'the blue muffler Yumiko knit' (Kubozono 1993: 211)

Previous empirical studies
Relative clauses

Kubozono (1993) compared 4 different phrase structures:

- No distinction between phrases and clauses were made.
- Relative clauses are treated in parallel with other phrases.

a) [[A B][C D]] ↑ MB

b) [A [B [C D]]] ↑ MB ↑ MB

c) [[A [B C]] D] ↑ MB

d) [A [[B C] D]] ⇧ MB

(Kubozono 1993: 212)

Previous empirical studies
Coordinated main clauses

Kawahara & Shinya (2008) compared coordinated clauses with gapping sentences (among others):

- *Murasugi-wa namauni-o (moritsuke),*
  Murasugi-TOP sea.urchin-ACC put.on.dish
  Munakata-wa mamemochi-o (moritsuke),
  Munakata-TOP bean.rice.cake-ACC put.on.dish
  Morimura-wa aemono-o moritsuketa.
  Morimura-TOP mixed.salad-ACC put.on.dish

'Murasugi put a sea urchin on a dish, Munakara put bean rice cake on a dish, and Morimura put a mixed salad on a dish.

Previous empirical studies
Coordinated main clauses

Kawahara & Shinya (2008) compared coordinated clauses with gapping sentences (among others):

- Clause boundaries are prosodically marked differently from phrase boundaries.
  - 5 phonetic cues that distinguish PClauses from PPhrases
    - Clause-final lowering
    - Creaky vowels
    - Obligatory pauses
    - Pitch resets within and between clauses
    - Clause-initial pitch rises

Previous empirical studies
Coordinated main clauses

Kawahara & Shinya (2008) compared coordinated clauses with gapping sentences (among others):

- Clauses tested in this experiment are all main clauses.
- No predictions can be made about embedded clauses.

A question still remains as to whether all types of clauses are mapped to PClause via the syntax–prosody mapping.

Previous empirical studies
Embedded clauses

Ishihara's (2007) stimuli contained embedded clauses:

- Naoya-wa **[Mari-ga wain-o nomiya-de nonda ka]**
  Naoya-TOP Mari-NOM wine-ACC bar-LOC drank Q
  imademo siritagatteiru
  even.now want.to.know

'Naoya still wants to know whether Mari drank wine at the bar.'

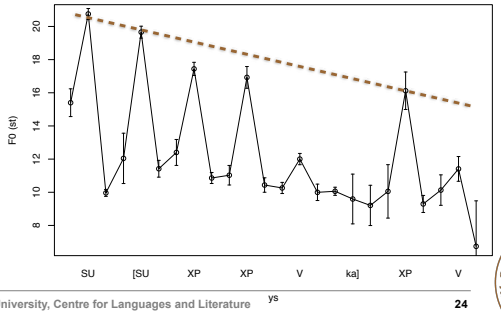
- Some (but not all) speakers' data showed a high F0-peak at the clause-initial word in comparison to the following clause-medial F0-peaks.

No systematic comparison of clause and phrase boundaries in this experiment.

Previous empirical studies
Embedded clauses

Ishihara's (2007) stimuli contained embedded clauses:

- SU_{mat} **[SU_{emb} XP_{emb} XP_{emb} V_{emb} ka]** XP_{mat} V_{mat}



Interim Summary

- The Syntax–Prosody Mapping Hypothesis (SPMH)
  - Syntax–prosody correspondence at three different levels:
    - PWords, PPhrases, PClauses
- The PClause in Japanese
  - Most analyses: two phrase levels (e.g., MiP < MaP) but no PClause
  - Kawahara & Shinya (2008): evidence for the PClause
- Previous empirical studies
  - No systematic comparisons / no distinctions between phrase and clause levels (Uyeno et al, Kubozono, Ishihara)
  - Only main clauses (Kawahara & Shinya 2008)

Research Question

1. Are embedded clauses mapped to PClauses?
   If so, what are the phonetic cues of the PClause?
2. What kind of theoretical implications do the mapping of embedded clauses to PClauses (or the lack thereof) have regarding the theory of the syntax–prosody mapping?

Experiment
Methodology

Experiment
Subjects

- Subjects
  - 14 native Japanese speakers
    - from Tokyo or surrounding areas
    - 9 females, 5 males
    - students (grad/undergrad) at a university located in Tokyo
    - voluntary participation; paid
  - In the (preliminary) results to be reported in this talk:
    - 6 speakers (3 female, 3 male)

Experiment
Stimuli

- Stimuli
  - 4 conditions (0xp, 1xp, 2xp, cp) x 4 items x 3 repetitions (= 48 sentences) per speaker
  - mixed with 192 filler sentences, pseudo-randomized
  - repetition: the stimuli set recorded in three different randomization orders
  - two recording sessions per speaker, approx. 1 week interval in between
    - session 1: 0xp, 2xp
    - session 2: 1xp, cp

Experiment
Stimuli

4 conditions (target word = **Word2**):

a. **No XP boundary (0xp)**
[$_{DP}$ Word1-and **Word2**]-NOM [$_{VP}$ Word3-ACC Word4-to V]

b. **1 XP boundary (1xp)**
Word1-TOP [$_{VP}$ **Word2**-ACC [$_{DP}$ Word3-GEN Word4]-to V]

c. **2 XP boundaries (2xp)**
Word1-TOP [$_{VP}$ [$_{DP}$ **Word2**-GEN Word3]-ACC Word4-to V]

d. **Clause boundary (cp)**
Word1-TOP [$_{CP}$ **Word2**-NOM Word3-ACC Word4-to V Comp] V

Experiment
Stimuli

4 conditions (target word = Word2):

a. **No XP boundary (0xp)**
[DP Yūta-to **Naoya**]-wa [VP imooto-o pātyī-ni maneita]
Y.-and. N.-TOP sister-ACC party-to invited
'Yuta and Naoya invited their sisters to the party.'

b. **1 XP boundary (1xp)**
Yūta-wa [VP **Naoya**-o [DP imooto-no pātyī]-ni maneita]
Y.-TOP N.-ACC sister-GEN party-to invited
'Yuta invited Naoya to his sister's party.'

c. **2 XP boundaries (2xp)**
Yūta-wa [VP [DP **Naoya**-no imooto]-o pātyī-ni maneita]
Y.-TOP N.-GEN sister-ACC party-to invited
'Yuta invited Naoya's sister to the party.'

d. **Clause boundary (cp)**
Yūta-wa [CP **Naoya**-ga imooto-o pātyī-ni maneita to] omotteita
Y.-TOP N.-NOM sister-ACC party-to invited that. was.thinking
'Yuta believed that Naoya invited his sister to the party.'

Experiment
Stimuli

- 4 conditions (target word = Word2):
  a. No XP boundary (0xp)
  b. 1 XP boundary (1xp)
  c. 2 XP boundaries (2xp)
  d. Clause boundary (cp)
- Predictions 1 (phrase-level): **0xp < 1xp < 2xp**
  - downstep on Word2 in 0xp
  - larger f0-rise (Metrical Boost) on 2xp than in 1xp
- Prediction 2 (phrase vs. clause): **1xp, 2xp < cp**
  - Clause boundaries are marked by a higher F0 than phrase boundaries (1xp, 2xp).

Experiment
Annotation, Analysis

- Forced alignment:
  - Julius ver. 4.5 (Lee and Kawahara 2019)
  - Julius Segmentation Kit ver. 4.3.1
  - pyjuliusalign ver. 2.0 (Mahrat 2019)
  - Word boundaries were checked and corrected manually.
- Annotation
  - Praat (Boersma & Weenink 2019)
  - F0-maxima (that are judged as corresponding to the peak of an H*+L pitch accent) of each word
  - F0-minima before and after the F0max
- Statistical analysis
  - R ver. 3.6.1

Experiment
(Preliminary) Results

Experiment
Results

- 6 speakers analyzed (3 female, 3 male)
  - sp02(f)
  - sp03(f)
  - sp04(m)
  - sp05(m)
  - sp06(f)
  - sp07(m)

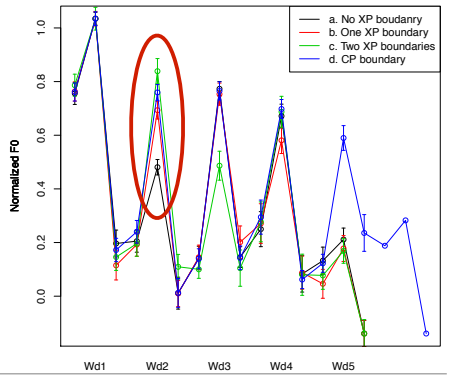
Experiment
Results: F0-max of the target word (Word2)

- F0-max of the target word (Word2)
  - Prediction 1 (0xp < 1xp < 2xp)
    - borne out (for most speakers)
  - Prediction 2 (1xp, 2xp < cp)
    - Not a single speaker showed this pattern

Experiment
Results: F0-max of the target word (Word2)

- All speaker (normalized data)
  - 0xp < 1xp < 2xp. (2xp higher than 1xp and cp)
  - cp: no significant difference from 1xp, 2xp
- 6 individual speakers (3 female, 3 male)
  - sp04(m): 0xp < 1xp ≈ cp < 2xp
  - sp07(m): 0xp < 1xp ≈ cp < 2xp
  - sp02(f): 0xp < 1xp ≈ 2xp ≈ cp
  - sp06(f): 0xp < 1xp ≈ 2xp; cp < 2xp
  - sp03(f): 0xp < 1xp < 2xp ≈ cp
  - sp05(m): 0xp ≈ 1xp ≈ 2xp; 0xp < cp

Experiment
Results: F0-max of the target word (Word2)



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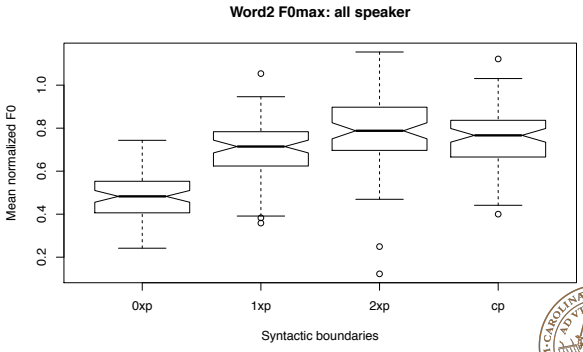

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Experiment
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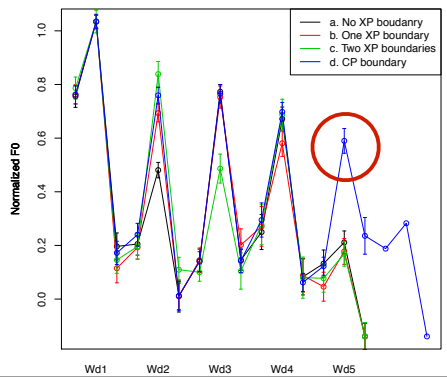


Experiment
Results: F0-max of the verb (Word5)

- Extra-high F0 on the verb in the cp condition:
  - The f0-max of the (embedded clause) verb shows a much higher value compared to other conditions.
  - This is due to the boundary pitch movement (BPM) on the complementizer *to*.
    - This phenomenon can be interpreted as the phonetic realization of nuclear prominence on the immediately preverbal element (Ishihara et al. 2018).
    - It is not necessarily a prosodic marking of the end of the embedded clause.

Experiment
Results: Summary

- F0-peaks are sensitive to the number of phrase boundaries (Prediction 1 confirmed)
- However, they do not seem to be sensitive to the boundary of embedded clauses (Prediction 2 rejected)

Discussion

Discussion

2 possible explanations for the lack of the SP-mapping for embedded clauses:

1. Interaction with prosodic wellformedness conditions (PWCs)
2. There is no syntax–prosody mapping at the clause-level.

Scenario 1

Interaction with Prosodic Wellformedness Constraints

Discussion
Scenario 1: Interaction with PWCs

- Effects of syntax–prosody mapping constraints (such as MatchClause) may be suppressed by prosodic wellformedness constraints (PWCs).
- In embedded clauses, one of the constraints from the Strict Layer Hypothesis, i.e., Layeredness, prevents the PClause from appearing inside a PPhrase.

Discussion
Scenario 1: Interaction with PWCs

Strict Layer Hypothesis
(where C_n = some prosodic category)

- Layeredness: No C_i dominates a C_j, $j > i$,
  e.g. “No σ dominates a Ft.”
- Headedness: Any C_i must dominate a C_{i-1} (except if C_i = σ),
  e.g. “A PWd must dominate a Ft.”
- Exhaustivity: No C_i immediately dominates a constituent C_j, $j < i-1$,
  e.g. “No PWd immediately dominates a σ .”
- Nonrecursivity: No C_i dominates C_j, $j = i$,
  e.g. “No Ft dominates a Ft.”

(Selkirk 1996:190)

Discussion
Scenario 1: Interaction with PWCs

- Embedded clauses (= clausal complements of matrix verbs) are always dominated by a phrase (i.e., VP).
  [VP [CP … Comp] V]
- If the VP maps to a PPhrase, and the CP to a PClause, the resulting prosodic structure will violate Layeredness (Selkirk 1996).
  [VP [CP … Comp] V] ⇒ * (φ {ι … } V)

Violatin of Layeredness

Discussion
Scenario 1: Interaction with PWCs

- In Tokyo Japanese, then, it can be hypothesized that the mapping of embedded standard clauses to PClause is suppressed in order to preserve the effect of Layeredness.
  - Layeredness >> MatchClause
- Given that Layeredness is considered inviolable (Selkirk 1996:190), the lack of clause-level mapping for embedded clauses are universally expected from the standard theories of the syntax–prosody mapping.

Scenario 2

No clause-level syntax–prosody mapping

Discussion
Scenario 2: No clause-level syntax–prosody mapping

Another possible hypothesis:

- There is no mapping of syntactic clauses to PClauses.
- PClauses instead exhibit correspondences to certain discourse-related notions/categories.
  - illocutionary force / speech act
  - information structural categories, e.g., topics

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- Selkirk (2011) — Two notions of clauses
  - standard clauses
    - "the constituent that is the complement of the functional head Comp^0"
  - illocutionary clauses
    - "the highest syntactic projection of the sentence and carries illocutionary force"

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- Selkirk (2011) — Two notions of clauses
  - standard clauses
  - illocutionary clauses
- "What are being called here illocutionary clauses are commonly observed to correspond to intonational phrases in phonological representation (see, e.g. Downing 1970; Nespor and Vogel 1986; Ladd 1986; Selkirk 2005; Dehe 2009 on English)."
- "It is less commonly observed, though apparently necessary, for standard clauses to correspond to intonational phrases."

(Selkirk 2011: 452)

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- An illocutionary force is (at least, quite often considered) a necessary condition for the mapping of a clause to a PClause. (e.g. Downing 1970; Nespor and Vogel 1986; Ladd 1986; Selkirk 2005)
- Standard clauses are often *not* mapped to a PClause.

Then, should there be a need to assume the clause-level mapping principle at the syntax–prosody interface?

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- It could, for example, be hypothesized that, instead of syntactic clauses, certain discourse-related categories are mapped to PClauses.
  - illocutionary force (Downing 1970, Nespor & Vogel 1986, inter alia)
  - information structural categories (e.g., topic)

These categories are not necessarily syntactically uniform (they may be DP, VP, CP, etc.)

They are related to the discourse structure in which sentences are produced.

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- This claim is essentially similar to Selkirk's (2005) proposal.
  - Comma Phrase (CommaP) — a phrase annotated with a [+comma] feature (Potts 2002, 2003, 2005)
    - performed as a separate speech act (at LF)
    - produced with a "comma intonation" (at PF)
  - CommaPs include
    - supplementary clauses ("nonrestrictive" relative clauses, appositives, *as*-parentheticals, etc.)
    - root clauses
    - (possibly) left/right-peripheral sentence adjuncts (incl. "as for" topics)

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- This claim is essentially similar to Selkirk's (2005) proposal.
  - The SP interface constraint Align R/L (CommaP, IP)
  - The SP interface constraint Align R/L (XP, MaP)
  - The SP interface constraint FOCUS-dominates-ΔIP
  - Prosodic wellformedness constraints on minimum and maximum size of IP/MaP

PClause (IP) appears to be always associated with certain discourse-related notions (speech act, topics, focus).

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- PClause (IP) appears to be always associated with certain discourse-related notions (speech act, topics, focus, etc.).
  - These notions are often analyzed as morphosyntactic features attached to a syntactic constituent, or as functional projections ([+comma], TopP, F-marking, etc.).
  - The apparent mapping of these syntactic categories and PClauses may just be an artefact of syntax-based analyses of discourse-related notions.

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- Then, it would be misleading to treat the mapping between these discourse-related categories and PClause as part of the *syntax*–prosody interface.
  - It is at least safe to say that the mapping under discussion does *not* seem to be between syntactic *clauses* and PClauses.

Evidence for Mapping of Standard Clauses?

Discussion

Scenario 2: No clause-level syntax–prosody mapping

- There are, however, apparent cases of mapping between standard clauses and PClauses.
- "It is less commonly observed, though apparently necessary, for standard clauses to correspond to intonational phrases."

(Selkirk 2011: 452–453)

  - The Xitsonga (Selkirk 2011)
  - German (Truckenbrodt 2005)
  - Huave and Luganda (Pak 2008)
  - Japanese (Selkirk 2009)

Discussion

Scenario 2: No clause-level syntax–prosody mapping

Xitsonga (Selkirk 2011: 441)

- Penultimate lengthening (PL) marks the right-edge of the PClause
- Sentence with a postposed subject

clause[clause[[y-**â:**j!á$_{Verb}$]]clause [n-gúl**ú:**ve]]clause (K150-151)
Class9.subj-tense-eat-FV Class9-pig
'It's eating, the pig.'

  - $_{I}($ $_{I}($ y**â:**j!á $)_{I}$ n-gúl**ú:**ve$)_{I}$
  - * $_{I}($ y**â:**j!á $)_{I}$ $_{I}($ n-gúl**ú:**ve$)_{I}$

  - The embedded part of the (remnant) clause belongs to the main clause, and hence can be considered as (part of) an illocutionary clause (or a CommaP).

Discussion

Scenario 2: No clause-level syntax–prosody mapping

Southern German (Truckenbrodt 2005)

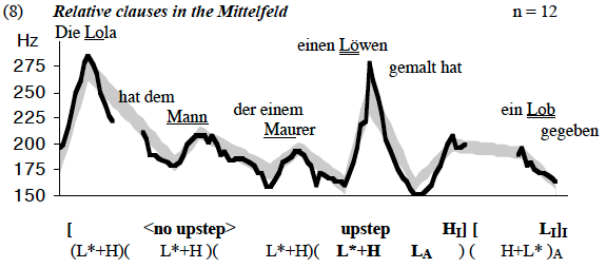
- Evidence for the right edge of an intonation phrase (upstep, L_AH_I edge tone combination) is found at the right edge of embedded CPs, but not preceding the left edge of embedded CPs.

(Truckenbrodt 2005: 9)

Discussion

Scenario 2: No clause-level syntax–prosody mapping

(8) *Relative clauses in the Mittelfeld* n = 12



[Die Lola hat dem Mann
[der einem Maurer einen Löwen gemalt hat]$_{CP}$ ein Lob
gegeben]$_{CP}$

Discussion

Scenario 2: No clause-level syntax–prosody mapping

Truckenbrodt's (2005) data from Southern German

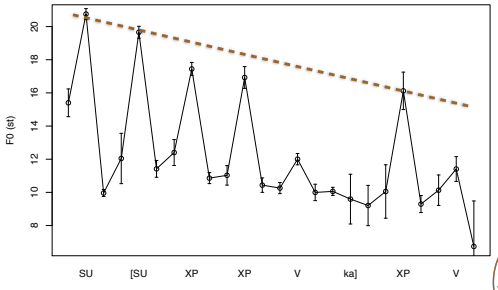
- The relative clause is dominated by a DP.
- Furthermore, the relative clause makes the DP considerably long, which could trigger a PClause boundary at the end of this long DP.

Given that, it is still unclear whether it is the relative clause, or the unusually long DP, that is mapped to a PClause.

Discussion
Scenario 2: No clause-level syntax–prosody mapping

Japanese (Ishihara 2007)

- SU_{mat} **[SU_{emb} XP_{emb} XP_{emb} V_{emb} ka]** XP_{mat} V_{mat}



Discussion
Scenario 2: No clause-level syntax–prosody mapping

Japanese (Ishihara 2007)

- SU_{mat} **[SU_{emb} XP_{emb} XP_{emb} V_{emb} ka]** XP_{mat} V_{mat}
  - Two possible explanations:
    - (i) These sentences all contain an embedded question, which may be considered an independent illocutionary act.
    - (ii) The nominative subject (marked with *-ga*) was interpreted as the focus of the question.

Discussion
Scenario 2: No clause-level syntax–prosody mapping

WH-prosody in Fukuoka Japanese (Selkirk 2009)

- Selkirk (2009) claims, based on the data from Fukuoka Japanese (Hayata 1985, Kubo 1989, 2005, Smith 2005), that Japanese shows the mapping of standard clauses to PClause.

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- Selkirk (2009): Fukuoka Japanese

a. kyo]o da[re-ga biiru nonda
today WHO-nom beer drank ∅COMP
'Who drank beer today?

b. da[re-ga kyoo biiru nonda
WHO-nom today beer drank ∅COMP
'Who drank beer today?

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- Selkirk (2009): Fukuoka Japanese

[[[da[re-ga kyoo biiru nonda]]ka] sitto]o]
WHO-nom today beer drank COMP know ∅COMP

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- Selkirk (2009): Fukuoka Japanese
  - The right edge of the intonational phrase containing the wh-word marks the right edge limit of the high tone plateau that extends rightward from the wh-word.

(kyoo dare-ga biiru nonda)
WHO-nom ∅COMP
((dare-ga kyoo biiru nonda)ka sittoo)
WHO-nom COMP ∅COMP

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- Selkirk (2009): Fukuoka Japanese
  - This generalization is empirically not correct, however.
  - [**donna** sigoto syoo] hito-to ano-hito kekkonsita to?
    what.kind job do person-with that-person married Q
    '(lit) The person [who does what kind of job] did that person get married to?
    Kubo (1989: 81)
  - Taro-wa [dare-ga kita tokorode] kaeru?
    T.-TOP. who-NOM came although return
    Who is x such that Taro would return even if x comes?
    Kubo (2001: 29)

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- The WH-prosody of Fukuoka Japanese marks the scope of the WH-question, exactly like that of Tokyo Japanese.

Embedded scope question
[Naoya-wa [[Mari-ga ↑nani$_i$-o↓ nomiya-de nonda] ka$_i$]
Naoya-TOP Mari-ACC what-ACC bar-LOC drink Q
↑Yumi-ni morasita]
Yumi-DAT divulge
"Naoya divulged to Yumi what Mari drank at the bar."

Matrix scope question with embedded *wh*-word
Naoya-wa [[Mari-ga ↑nani$_i$-o↓ nomiya-de nonda] to]
Naoya-TOP Mari-NOM what-ACC bar-LOC drink COMP
Yumi-ni morasita no$_i$
Yumi-DAT divulge Q
"What did Naoya divulge to Yumi that Mari drank at the bar?"

Discussion
Scenario 2: No clause-level syntax–prosody mapping

- None of these data seems to be a strong evidence for the mapping of standard clauses to PClauses
  - The Xitsonga (Selkirk 2011)
  - German (Truckenbrodt 2005)
  - Japanese (Ishihara 2007, Selkirk 2009)

Summary

2 possible scenarios

1. The SP-mapping is suppressed by prosodic wellformedness conditions (PWCs)
   - This option does not require any modification to the current theory of the syntax–prosody mapping.
2. There is no syntax–prosody mapping at the clause-level.
   - Not syntactic clauses, but certain discourse-related categories are mapped to the PClause
   - Revision required to the standard theory, but may leads to a simpler model.

Thank you very much!

- Special thanks to Natsumi Goto, Sara Myrberg, and Apollonia Wojewódzka for their help with the data analysis.
- This study is conducted as part of the research project "The prosody of embedded clauses and syntactic processing in Japanese," funded by the Swedish Research Council.

Swedish Research Council