The Prosody of English Contrastive Topic

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1. Overview

◦ What is contrastive topic (CT)?
◦ How is CT realized cross-linguistically?

◦ How should we represent CT structurally?

◦ Present new account of English CT prosody in a framework that
- doesn't exempt CT from standard interface mechanics,
- could plausibly extend to CT facts in other languages.

2. Background on Prosody

◦ Standard assumptions about English prosodic structure:
- IntP > PhonP > … > PWord > Foot > Syllable
- One boundary tone (L% or H%) per IntP.
- One phrase tone (L- or H-) per PhonP.
- Head of PhonP is pitch accented (e.g. H*).
- Head of IntP is nuclear pitch accent.

◦ Focus can manifest in accenting, phrasing, word order
◦ These effects all stem from FocusProminence (Büring 2010)

◦ English focus is realized by a strong pitch accent.
◦ Following material is deaccented.

(1) A: a. What do you put in your pasta sauce? (Büring 2010)
b. Do you put tarragon, or thyme in your pasta sauce?
c. Do you put tarragon in your pasta sauce?
d. First, I put tarragon in my pasta sauce, then…
B: I put [*thyme*]$_{F}$ in my pasta sauce.
H* L- L%

◦ Focus can be narrow or broad, possibly even sentential.
◦ Cues to size of focus can be subtle or absent.

(2) a. I bought a book about [*bats*]$_{F}$. (Q: What kind of book did you buy?) (after Selkirk 1995)
b. I bought a [book about *bats*]$_{F}$. (Q: What did you buy?)
c. [I bought a book about *bats*]$_{F}$. (Q: What's up?)

◦ Standard cases of focus have single nuclear accent with "falling intonation": H* L- L%

◦ What determines the pitch accent, phrase, and boundary tone shape?
◦ What happens when we have more than one nuclear accent?

3. Exhaustive Focus and Contrastive Topic

◦ Typical cases of focus answer a single explicit or implicit question.
◦ Exhaustive Focus (Exh) is constituent that answers question.

◦ In examples below, we answer one question while leaving another unanswered.
◦ Contrastive Topic (CT) is what current question is about, implies question(s) about different topic.

◦ Examples adapted from Jackendoff (1972: 261):

(3) A: What about Persephone and Antonio? What did *they* bring? **CT+Exh**
B: [*Persephone*]$_{CT}$ … brought [the *gazpacho*]$_{Exh}$.
L+H* L- H% H* L- L%

(4) A: What about the gazpacho and the salad? Whose brought *those*? **Exh+CT**
B: [*Persephone*]$_{Exh}$ brought [the *gazpacho*]$_{CT}$ …
H* L- L+H* L- H%

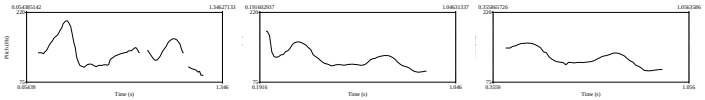
◦ Exh+CT is often dispreferred. Better examples:

(5) [*Nobody*]$_{Exh}$ solved [*all* of the problems]$_{CT}$ … **Exh+CT**
H* L- L+H* L- H%

(6) You [*don't*]$_{Exh}$ [*have* to]$_{CT}$ … **Exh+CT**
H* L- L+H* L- H%

◦ I assume underlying contour is the same, even if it's reduced.

(7) (Fred won't, but…)
[*Ann*]$_{CT}$ [*will*]$_{Exh}$.
L+H* L- H% H* L- L%



◦ Some authors allow for CT without Exh (Jackendoff 1972, Büring 2003)
◦ Others treat this separately as "Rise-Fall-Rise" (Wagner 2012, Constant to appear)

(8) A: What about Persephone and Antonio? Did *they* bring anything? **Lone CT**
B: [*Persephone*]$_{CT}$ brought something…
L+H* L- H%

◦ Some allow sentential CT (Constant in prep.)

(9) A: Is John home? **Sentential CT**
B: [His *lights* are on]$_{CT}$…
L+H* L- H%

◦ How do presence and location of CT and Exh affect prosody?

◦ Büring 2003
[·]$_{F}$ → H* L- L% (A accent)
[·]$_{CT}$ → L+H* L- H% (B accent)

◦ But by *what mechanism* do [·]$_{CT}$ and [·]$_{F}$ translate into these contours?

◦ More recent accounts of CT aim to do without [·]$_{CT}$ marks.
◦ CT's are just F-marked phrases in specific configurations:
- Tomioka 2010: CT = focus associate of one operator (CT) not in scope of another (Exh).
- Wagner 2012: CT = focus associate of higher of two FOCUS operators.
- Constant 2012: CT = focus associate of CT operator.

4. Contrastive Topic Cross-Linguistically

4.1. German Bridge Contour

◦ Bridge Contour
- Rising pitch accent (L* H) on CT
- Falling pitch accent (H* L) on Exh
- High plateau in between

(10) And *Fred*? What did *he* eat? (Wagner 2012: ex. 14)

a. /*Fred* hat die *bohnen*\ gegessen. **CT+Exh**
Fred has the beans eaten
'[Fred]$_{CT}$ ate [the beans]$_{Exh}$.'

b. #Die *bohnen* hat *Fred* gegessen. (any contour) **Exh+CT**
the beans has Fred eaten

(11) And *the beans*? Who ate *those*? (Wagner 2012: ex. 15)

a. Die /*bohnen* hat *Fred*\ gegessen. **CT+Exh**
the beans has Fred eaten
'[The beans]$_{CT}$, [Fred]$_{Exh}$ ate.'

b. #*Fred* hat die *bohnen* gegessen. (any contour) **Exh+CT**
Fred has the beans eaten

4.2. Japanese CT *-wa*

◦ *-wa* marks topics generally
◦ CT = *-wa*-marked phrase with prominence
◦ No special prosody distinct from focus (Tomioka 2010: 115)

(12) A: Who ate what? (Tomioka 2010: 123)

B: *Erika*-**wa** *mame*-o tabe-ta (kedo)…
Erika-TOP beans-ACC eat-PAST but
'[Erika]$_{CT}$ ate [beans]$_{Exh}$… (but …)'

(13) A: Did both Erika and Ken pass? (Tomioka 2010: 120)

B: *Erika*-**wa** ukat-ta.
Erika-TOP pass-PAST
'[Erika]$_{CT}$ passed…'

◦ Any argument can get CT *-wa*?

(14) Boku-wa ano-mise-de *John*-**wa** nani-o kat-ta ka kii-ta. (Hara 2006: 74)
I-TOP that-shop-at John-TOP what-ACC buy-PAST Q ask-PAST
'I asked what (at least) [John]$_{CT}$ bought at that shop…'

◦ *-wa* can appear CT-internally:

(15) *Ame*-**wa** hutte imasu ga (taisita *koto*-wa arimasen). (Heycock 2008: ex. 45)
rain-TOP falling is but (important matter-TOP exists.NEG (due to Kuno 1973)
'It [is]$_{Exh}$ [raining]$_{CT}$… but it's [not]$_{Exh}$ [so much]$_{CT}$…'

4.3. Mandarin CT *-ne*

◦ Positions of *-ne*
- Directly following topicalized CT phrases
- Sentence-final when CT remains in situ (Constant 2011)

◦ Always followed by a large prosodic break (IntP?)

(16) Māma měi-tiān wǎnshàng hěn wǎn cái huí-jiā. (Shao 1989: 174)
mom every-day night very late only.then return-home
Bàba **ne**, gāncuì jiù bù huí-lái.
dad CT simply just not return-come
'Every day mom doesn't come home until late. [Dad]$_{CT}$ **NE**, doesn't even come back at all.'

(17) A: Are you going to the show?
B: Qù. *Nǐ* **ne**?
go you CT
'Yeah. [You]$_{CT}$ **NE**?'

(18) A: His family is poor, so you'd do better not to have dealings with him.
B: Tā jiā yǒu sān tóu niú **ne**. (Li and Thompson 1981: 301)
His family have three CL cow CT
'[His family has three cows]$_{CT}$ **NE**… (!)' (Isn't that proof that they're not poor?)

(19) Qù Déguó pà shòu guātiánzhīxián, nàme *biéde* guójiā xíng-bù-xíng **ne**?
go Germany fear receive suspicion then other country okay-not-okay CT
'If going to Germany would arouse suspicion, would [*other* countries]$_{CT}$ be okay **NE**?'

4.4. Paraguayan Guaraní *-katu*

◦ Second position clitic *=katu* marks utterance containing CT.
◦ Word order does not determine which phrase is CT.

(20) A: Juana was born in Argentina. Where was Bob born? (Tonhauser to appear: ex. 25a)
B: *Bob*=**katu** o-nasẽ *Estado Unido*-pe.
Bob=CT A3-born America-in
'[Bob]$_{CT}$ was born in [the US]$_{Exh}$.'

(21) A: Juana was born in Argentina. Who was born in the US? (Tonhauser to appear: ex. 25b)
B: *Bob*=**katu** o-nasẽ *Estado Unido*-pe.
Bob=CT A3-born America-in
'[Bob]$_{Exh}$ was born in [the US]$_{CT}$.'

4.5. Dedicated CT Positions

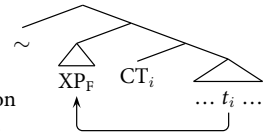
◦ **Italian** (Frascarelli and Hinterhölzl 2007)
- CT occurs in fixed position in left periphery (below aboutness topic, above focus and familiar topic)
- Always resumed by a clitic

◦ **Hungarian** (Gyuris 2002), **Czech** (Sturgeon 2006)
- CT occurs in fixed position in left periphery (below aboutness topic, above focus)
- Optionally resumed by a clitic
- CT or resumptive clitic usually receives rising intonation

5. Contrastive Topic Abstraction

Constant 2012

- No $[\cdot]_{CT}$ marks in the syntax
- CT phrase raises to CT operator position at LF
- CT operator produces nested alternatives in the focus dimension
- Rooth's squiggle (~) relates focus values to discourse anaphors



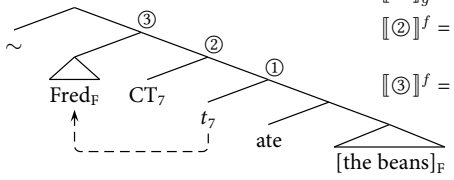
(22) **CT Operator Semantics**

a. $[\![\mathrm{CT}_i\ \alpha]\!]^o_g = \lambda x.[\![\alpha]\!]^o_{g[i\to x]}$

b. $[\![\mathrm{CT}_i\ \alpha]\!]^f_g = \{\lambda x.[\![\alpha]\!]^f_{g[i\to x]}\}$

- Advantages of Topic Abstraction
  - Extends to CT marking in questions
  - Captures CT asymmetries in multiple CT data
  - Predicts limited island sensitivity of CT
  - Capitalizes on existing models of focus

(23) "[Fred]$_{CT}$ ate [the beans]$_{Exh}$."



$[\![①]\!]^f_g = \{g(7)$ ate the beans, $g(7)$ ate the pasta, … $\}$

$[\![②]\!]^f = \{\lambda x.\{x$ ate the beans, x ate the pasta, … $\}\}$

$[\![③]\!]^f = \left\{ \begin{array}{c} \{\text{Fred ate the beans, Fred ate the pasta, …}\}, \\ \{\text{Mary ate the beans, Mary ate the pasta, …}\}, \\ \cdots \end{array} \right\}$

= 'For each person, what did they eat?'

- But if there's no $[\cdot]_{CT}$, where does CT prosody come from?
- Proposal:
  - English CT operator is realized as a tonal IntP enclitic (L-H%)
  - Suppose L+H* accent comes automatically in L-H% phrase
  - Now we just need to explain the phrasing facts…

(24) CT I gave [Fred]$_F$ [the beans]$_F$ (And what did you give *Fred*?)

a. I gave *Fred* … the *beans*.
L+H* L- H% H* L- L%

b. *Fred* … I gave the *beans*.
L+H* L- H% H* L- L%

(25) CT I gave [Fred]$_F$ [the beans]$_F$ (And who did you give the *beans* to?)

a. I gave *Fred* the *beans*…[1]
H* L- L+H* L- H%

b. The *beans* … I gave *Fred*.
L+H* L- H% H* L- L%

(26) CT I gave him [the beans]$_F$ (Did you give him the beans and the pasta?)

a. I gave him the *beans*…
L+H* L- H%

b. The *beans* I gave him…
L+H* L- H%

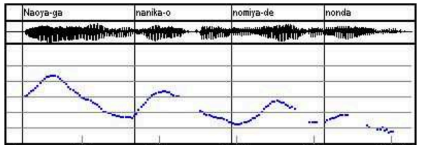
[1]Transcribing Exh+CT as one IntP is fairly standard (Pierrehumbert and Hirschberg 1990: ex. 33, Steedman 2000: ex. 4, Steedman 2008: ex. 34b). But it would be nice to have empirical support that this break is shorter than CT+Exh.

6. Japanese Wh- Prosody

- Observation: (Tomioka 1997, Deguchi & Kitagawa 2002, Kitagawa & Tomioka 2003, Ishihara 2003)
  Material between a wh- word and its binder is compressed.
- Examples below from Ishihara (2003: §3)
- I've added phrasing to show domain of post-focal compression
- (Note Ishihara wants to account for these effects without reference to prosodic structure)

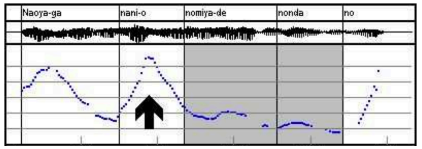
(27) **Wh- Indefinite**

( )( )( )( )
Náoya-ga **nánika**-o nomíya-de nónda.
Naoya-NOM something-ACC bar-LOC drank
'Naoya drank something at the bar.'



(28) **Wh- Bound by Q**

( )( )
Náoya-ga **náni**-o nomíya-de nónda **no**.
Naoya-NOM what-ACC bar-LOC drank Q
'What did Naoya drink at the bar?'



- In embedded clauses:

(29) **Wh- Indefinite**

( )( )( )( )( )( )( )
Náoya-wa [Mári-ga **nánika**-o nomíya-de nónda to]$_{CP}$ ímademo omótteru.
Naoya-TOP Mari-NOM something-ACC bar-LOC drank that still think
'Naoya still thinks that Mari drank something at the bar.'

(30) **Wh- Bound by Matrix Q**

( )( )( )
Náoya-wa [Mári-ga **náni**-o nomíya-de nónda to]$_{CP}$ ímademo omótteru **no?**
Naoya-TOP Mari-NOM what-ACC bar-LOC drank that still think Q
'What does Naoya still think that Mari drank at the bar?'

(31) **Wh- Bound by Embedded Q**

( )( )( )( )( )
Náoya-wa [Mári-ga **náni**-o nomíya-de nónda **ka**] ímademo obóeteru.
Naoya-TOP Mari-NOM what-ACC bar-LOC drank Q still remember
'Naoya still remembers what Mari drank at the bar.'

- Domain of compression corresponds to a prosodic domain (MaP)? Debated.
- Smith 2011: In Fukuoka Japanese "the span from wh- to associated C realized as single PhonP."

(32) **Condition on Phrasing Wh- and C** (Richards 2010: 151)

Given a wh-phrase α and a complementizer C where α takes scope, α and C must be separated by as few minor phrase boundaries as possible, for some level of minor phrasing.

- This constraint can be satisfied by wh- movement or by adjusting prosodic structure.

7. Wrapping CT and its Associate

○ Constraints

- **Head-IntP-R**: IntP head is rightmost.
- ***IntP**: Penalize each IntP (cf. Féry 2007)
- **Stress-Focus**
  Focus (XP_F) is maximally prominent within its focus domain.
  (cf. Truckenbrodt 1995: 160)
- **Wrap-[CT XP_{CT}]$_{IntP}$**
  The CT operator and its associate occur in the same IntP.
  (cf. Richards' 2010 condition on $C_{[+wh]}$ and wh-phrase)

(33) **CT+Exh**

CT I gave [Fred]$_{CT}$ [the beans]$_{Exh}$	Wrap-[CT XP_{CT}]$_{IntP}$	Stress-Foc	*IntP
a. (*)(*)$_{PhonP}$ (*)$_{IntP}$		*!	*
b. ☞ (*)(*)$_{PhonP}$ (*)(*)$_{IntP}$			**

(34) **Exh+CT**

CT I gave [Fred]$_{Exh}$ [the beans]$_{CT}$	Wrap-[CT XP_{CT}]$_{IntP}$	Stress-Foc	*IntP
a. (*)(*)$_{PhonP}$ (*)(*)$_{IntP}$	*!		**
b. ☞ (*)(*)$_{PhonP}$ (*)$_{IntP}$		*	*

(35) **CT Raised Over Exh**

[The beans]$_{CT}$ CT I gave [Fred]$_{Exh}$	Wrap-[CT XP_{CT}]$_{IntP}$	Stress-Foc	*IntP
a. (*)(*)$_{PhonP}$ (*)$_{IntP}$		*!	*
b. ☞ (*)(*)$_{PhonP}$ (*)(*)$_{IntP}$			**

(36) **Lone CT**

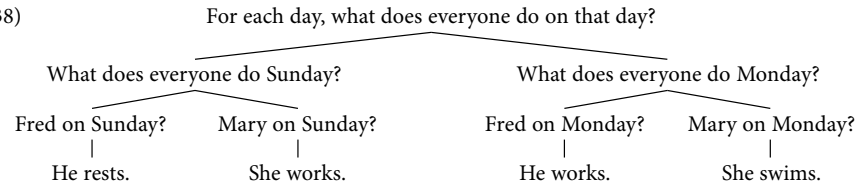
CT I gave him [the beans]$_{CT}$	Wrap-[CT XP_{CT}]$_{IntP}$	Stress-Foc	*IntP	*Move
a. (*)$_{PhonP}$ (*)$_{IntP}$			*	

(37) **Lone CT Raised**

[The beans]$_{CT}$ CT I gave him	Wrap-[CT XP_{CT}]$_{IntP}$	Stress-Foc	*IntP	*Move
a. (*)$_{PhonP}$ (*)$_{IntP}$			*	*

7.1. Multiple CT

(38)



(39) a. On [*Sundays*]$_{CT}$ … [*Fred*]$_{CT}$ … [*rests*]$_{Exh}$.
L+H* L- H% L+H* L- H% H* L- L%
{ But *Mary works* (on Sundays). / ??But on *Mondays*, he *works*. }

b. [*Fred*]$_{CT}$ … on [*Sundays*]$_{CT}$ … he [*rests*]$_{Exh}$.
L+H* L- H% L+H* L- H% H* L- L%
{ But on *Mondays*, he *works*. / ??But *Mary works* (on Sundays). }

(40) **CT+CT+Exh (CT's Raised)**

[On Sundays]$_{CT}$ CT [Fred]$_{CT}$ CT [rests]$_{Exh}$	Wrap-[CT XP_{CT}]$_{IntP}$	Stress-Foc	*IntP
a. (*)(*)(*)$_{PhonP}$ (*)(*)(*)$_{IntP}$			***

(41) **CT+CT+Exh (Inverse Scope)**

CT CT [On Sundays]$_{CT}$ [Fred]$_{CT}$ [rests]$_{Exh}$	Wrap-[CT XP_{CT}]$_{IntP}$	Stress-Foc	*IntP
a. (*)(*)(*)$_{PhonP}$ (*)(*)(*)$_{IntP}$	*		***
b. (*)(*)(*)$_{PhonP}$ (*)(*)$_{IntP}$		*	***

(42) **CT+Exh+CT (Surface Scope)**

[Fred]$_{CT}$ CT CT [rests]$_{Exh}$ [on Sundays]$_{CT}$	Wrap-[CT XP_{CT}]$_{IntP}$	Stress-Foc	*IntP
a. (*)(*)(*)$_{PhonP}$ (*)(*)$_{IntP}$		*	**

(43) **CT+Exh+CT (Inverse Scope)**

CT [Fred]$_{CT}$ CT [rests]$_{Exh}$ [on Sundays]$_{CT}$	Wrap-[CT XP_{CT}]$_{IntP}$	Stress-Foc	*IntP
a. (*)(*)(*)$_{PhonP}$ (*)(*)(*)$_{IntP}$	*		***
b. (*)(*)(*)$_{PhonP}$ (*)$_{IntP}$		**	***

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