Imperatives with downstepped level terminal contours (H* !H-L%)  

Sunwoo Jeong & Cleo Condoravdi  
Department of Linguistics, Stanford University  

https://github.com/sunwooj/dltimperatives
Sentence types and illocution

- **Declaratives**
  - You trimmed the trees.

- **Interrogatives**
  - Did you trim the trees?

- **Imperatives**
  - Trim the trees!

*form-force mapping*
Imperatives and illocution

Hand in the report by noon! command
Get some rest! (concerned) advice
Take the A train! (disinterested) advice
Take a cookie! offer
Enjoy your dinner! well-wish
Drop dead! ill-wish, curse
Okay, go out and play! concession

Schmerling (1982), a.o.
Sentence type conventions

If a speaker utters...

**Declarative**
with content $p$

thereby commits to acting as though she believes $p$

**Interrogative**
with content $Q$

thereby commits to a preference for having the addressee commit to an answer to $Q$

**Imperative**
with content $p$

thereby commits to an action relevant preference for $p$

Context

- Assert
- Accuse
- Query
- Command
- Request
- Express wish

Intonation and illocution

Content

Intonation

Sentence type convention

Context

+ α?

Strong vs. weak imperatives  Portner (forthcoming), Keough et al. (2016)

Have a banana. (H* L-L%)  weak (may)

Have a banana. (L* L-L%)  strong (must)
Overview

• What is the **nature of the interaction** between **content**, **sentence-type**, **intonation**, and **context**?
  – How do these factors influence people’s illocutionary and perlocutionary inferences?

• A case study with a new type of intonation:
  – Downstepped level terminal contour (H* !H-L%)
  – **DLT** (H* !H-L%) with **imperatives**
DLT \((H^* \!H-\!L\%)\)

“Have fun storming the castle! \((H^* \!H-\!L\%)\)” – The Princess Bride (1987)
DLT (H* !H-L%)  

- Types of uses studied  
  - Calling contour (Pike 1945)  
    “Anna! (H* !H-L%)”  
  - Stylization or shared convention (Ladd 1978)  
    “Your lunch! (H* !H-L%)”, “# Fire! (H* !H-L%)”  

- Decompositional analysis of the contour  
  (Pierrehumbert & Hirschberg 1990)  

- No connection drawn with imperatives
DLT (H* !H-L%) with imperatives

- **Well-wishes**
  - Enjoy the movie!
  - Enjoy your dinner!

- **Mnemonic requests**
  (cf. Crone 2016)
  - Don’t forget to feed the cats!

<table>
<thead>
<tr>
<th>DLT preferred</th>
<th>DLT infelicitous</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Have fun at the party!</em></td>
<td><em>Don’t touch the pie! (order)</em></td>
</tr>
<tr>
<td><em>Have a nice trip!</em></td>
<td><em>Take a cookie! (offer)</em></td>
</tr>
<tr>
<td><em>Remember to feed the cats!</em></td>
<td><em>Drop dead! (ill-wish)</em></td>
</tr>
</tbody>
</table>

![Pitch (semitones re 100 Hz) vs Time (s)](image)
**Hypothesis?**

**Content**

- **DLT preferred**
  - *(Ad has a minor cold)*
  - *Get well soon!*

  *(Sp leaving)*
  - *Goodbye! Don’t forget to feed the cats!*

- **DLT infelicitous**
  - *(Ad has pneumonia)*
  - *Get well soon!*

  *Don’t forget to feed the cats! I’ll put a reminder note.*

**Imperative**

- + DLT *(H* !H-L%)*
- + H* L-L%

**Well-wish, Mnemonic, etc.**

**Advice, Suggestion, etc.**
• DLT conventionally signals certain aspects of the discourse context
• DLT operates independently from the imperative sentence-type convention
Hypothesis

• **Imperative convention** *(Condoravdi & Lauer 2012)*
The speaker thereby commits to an action relevant preference for the content of the imperative.

• **DLT convention** *(new)*
The context is such that only the speaker’s utterance (and not his/her subsequent actions) is relevant to the realization of the content.
“Enjoy your dinner! (H* !H-L%)”

**Imperative convention**

Sp thereby commits to an action relevant preference for [[ Ad enjoys her dinner ]]

**DLT convention**

Sp thereby signals that the context is such that only the speaker’s utterance is relevant to speaker’s involvement in the realization of [[ Ad enjoys her dinner ]]

**Context**

+ (Real world knowledge)

**Illocution**

well-wish

**Perlocutions**

non-presumptuousness, friendly concern for Ad

i.e. Sp.’s future action choices are not affected by the stated preference.
Experiment

• Are well-wish and mnemonic imperatives generally more likely to host DLT?

• Can imperatives with the same content and illocution nonetheless prefer different intonation depending on the context?

• A perception experiment: context manipulation (manipulating degree of speaker involvement in bringing about the content); choosing the more likely intonation between a given pair
## Perception experiment: Materials

| Group 1 | DLT preferred | Enjoy your dinner.  
|         |               | Good luck with the test.  
|         |               | Have a nice holiday.  
|         |               | Enjoy the movie.  
| Group 2 | DLT infelicitous | Hand in the assignment by noon. (command)  
|         |               | Take a cookie. (offer)  
|         |               | Avoid the highway. (disinterested advice)  
|         |               | Take these pills for a week. (advice)  
| Group 3 | ambiguous w.r.t. DLT (depends on the context) | Get well soon.  
|         |               | Have fun at the party.  
|         |               | Remember to feed the cats.  
|         |               | Don’t forget your lunchbox. |
Perception experiment: Materials

- **Base recording**:  
  - monotonous
- **DLT tokens**  
  - H* !H-L%
- **non-DLT tokens**  
  - H* L-L%
  - L* L-L%

Base recordings produced by 4 speakers (2 male, 2 female)

Manipulations done using PSOLA
Experiment: Sample trial 1

(John is talking to his house-sitter friend Lily, right before leaving home)

John: Thanks so much for doing this. I gotta leave now. Bye!

Lily: Okay. Safe travels!

John: Thanks. __________

Q1: Which of the two sounds below is better suited to be inserted in the blank space _________ in the dialogue above?
Experiment: Sample trial 2

(John is giving his house-sitter friend Lily some instructions)

John: Thanks so much for doing this. Do you have any concerns?

Lily: Watering the plants, check. Getting the newspapers, check. Is there anything I am missing?

John: Yes. ____________ (pointing at the cupboard). The food is in there. I will put instructions and a reminder note on the fridge.

Q1: Which of the two sounds below is better suited to be inserted in the blank space _________ in the dialogue above?
Experiment: Sample trial 3

(A waitress is talking to a customer at a restaurant)

Waitress: Good evening! What can I get for you?

Customer: Can I get a cheeseburger with a side of fries?

Waitress: Sure thing! (10 minutes later) Here you go.

__________
Experiment: Sample trial 4

(A doctor is talking to his patient)

Doctor: Hello, how are you feeling today?

Patient: I am doing better but I still have a headache. Do you have anything that can help me get rid of it?

Doctor: (giving out a pill bottle) Yes. ___________ You will probably feel better soon, but come back if you still have the symptoms.
Experiment: Procedure

• 8 trials: 6 target trials counterbalanced in speaker gender; 2 filler trials

• 400 native English speakers recruited as participants

• Experiment lasted 10-20 minutes for each participant

• Mixed effects logistic regression models fitted to the data
Results: group 1 and group 2

- **Group 1** imperatives almost always associated with **DLT (H* !H-L%)**
  - *Enjoy your dinner!*
  - *Have a nice trip!*

- **Group 2** sentences mostly associated with **non-DLT (H* L-L% or L* L-L%)**
  - *Hand in the report by noon!*
  - *Take a cookie!*

Content of Group 1 & Group 2 sentences: strongly associated with specific contextual expectations
Results: group 3

- Contexts intended to mark **speaker non-involvement** (NI-context): significantly more DLT

- Contexts intended to mark **more speaker involvement** (INV-context): significantly less DLT

Context manipulation elicited less dramatic shifts in intonation than anticipated
Results: group 3 (continued)

- Context manipulations worked to different degrees.
- INV-contexts consistently elicited significantly less DLT responses.
Results

• Mixed effects logistic regression model fitted to the data:
  – Intonation choice as the main dependent variable
  – Sentence content and context manipulation as an independent variable
  – Speaker and participants as random effects

• Context manipulation is a significant predictor
• Sentence content also a significant predictor
“Enjoy your dinner! (H* !H-L%)”

**Imperative convention**

Sp thereby commits to acting in accordance with having a preference for [[ Ad enjoys her dinner ]]

**DLT convention**

Sp thereby signals that the context is such that only the speaker’s utterance is relevant to speaker’s involvement in the realization of [[ Ad enjoys her dinner ]].

**Context**

(Real world knowledge)

**Illocution**

well-wish

**Perlocutions**

non-presumptuousness, friendly concern for Ad

i.e. Sp’s future action choices are not affected by the stated preference.
“Take a cookie! (#H* !H-L%)”

Imperative convention

Sp thereby commits to acting in accordance with having a preference for [[ Ad takes a cookie ]]

# DLT convention

Sp thereby signals that the context is such that only the speaker’s utterance is relevant to speaker’s involvement in the realization of [[ Ad takes a cookie ]]

Sp. is expected to proffer the plate of cookies, etc.

Context

(Real world knowledge)

Illocution

offer

Perlocutions

Content

[[ Ad takes a cookie ]]
“Remember to feed the cats!”

In general, Sp presumed to have no control over Ad’s memory. 

Sp may put a reminder note to help with Ad’s memory.
Perlocutionary and social meanings of DLT

• Social and perlocutionary meanings frequently associated with DLT: *terminality, casualness*

• Analyzed as further inference derived from the interaction of the core DLT convention with requisite context and content

• Not specified in the convention itself
DLT without imperatives

• DLT convention operates independently of the imperative sentence-type convention
  – “Passenger A, please proceed to gate B. We wouldn’t want to leave without you! (H* !H-L%)”

• DLT with non-imperatives have very different perlocutionary flavors from DLT imperatives
  – Our account can easily predict this: under specification of cannot / will not
Consequences

• DLT marks certain aspects of the context
  – Can predict why it is often associated with well-wish and mnemonic imperatives
  – Can predict why it is only licensed for the above imperatives in certain contexts

• DLT operates independently from imperatives
  – Can predict uses with other sentence types which generate different perlocutionary effects
Theoretical implications

- Conventional effects of terminal contours
- Repercussions on theories of *form-force* mapping: cumulative effects of two conventions
Conclusion

• **DLT convention:**
The context is such that only the speaker’s utterance (and not his/her subsequent actions) is relevant to the realization of the content.

• Data and experiment:
https://github.com/sunwooj/dltimperatives

• We also have a more formal analysis of DLT!!

Thank you!
Experiment: Sample trial 5

*(Marcus is talking to his friend Dan in the hospital)*

Marcus: How are you feeling, Dan? I brought some flowers. When can you leave the hospital?

Dan: Thanks for the flowers. I have to stay another week to get the stitches out.

Marcus: I see. Well, I have to leave soon but I will come back in a few days. __________
(Marcus is talking to his friend Dan at school)

Marcus: Hi Dan! You've been sneezing a lot. Are you okay?

Dan: Oh yeah. It's just the allergy. Spring pollens do that to me but it's nothing serious.

Marcus: I see. Well; I gotta run to class now. __________
Hypothesis? (from non-imperatives)

- **Vocative** (Pike 1945): “Anna! (H* !H-L%)”
  - Cannot cover well-wishes or mnemonic imperatives

- **Stylization or shared convention** (Ladd 1978): “Your lunch! (H* !H-L%)”, “# Fire! (H* !H-L%)”
  - Why “Remember to feed the cats! (H* !H-L%)”?
  - Why not “# Take a cookie! (H* !H-L%)”?
Hypothesis?

• **Compositional analysis** (Pierrehumbert & Hirschberg 1990): H*+L signals that salience of the accented item should be inferred from mutual beliefs of the hearer
  – DLT highlights that $p$ takes part of the mutual belief (common ground)?
  – Does not predict that DLT precludes future speaker action
  – Wrongly predicts that DLT can occur with offer uses
Theories on imperatives

• Kauffmann (2012): performative uses of modals

• Portner (2007): To-Do List (deontic, bouletic, etc.); comparison with modals

• Condoravdi & Lauer (2012): order vs. offer uses distinguished *not* in terms of quantificational force