Effects of Argument Length and Focus Type on the Dative Alternation

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The Dative Alternation

- **PP-frame:**
  Give $[^{\text{theme}} \text{the cup that is filled with juice}]^{\text{recipient}}$ to the sailor.

- **Dative:**
  Give $[^{\text{recipient}} \text{the sailor}]^{\text{theme}}$ the cup that is filled with juice.

- **Heavy NP Shifted:**
  Give $[^{\text{recipient}} \text{to the sailor}]^{\text{theme}}$ the cup that is filled with juice.
Research Question:

- How do speakers choose whether to use the dative form or the PP-frame of a double object verb in English?
  - Weight
  - Focus (information focus vs. contrastive focus)
  - Can focus motivate word order independently of weight considerations?

- Is focus a uniform phenomenon?
  - Or are there different types of focus?
  - Is there a distinction between information focus and contrastive focus as regards their ability to influence the dative alternation?
What influences word order?

- **Ambiguity Avoidance?** - No
  - Global: “Alice saw the man with a telescope”
  - Local: “Give Grant’s letters to Lincoln to the Museum”

- **Lexical Bias?** – Yes
  - Verbs have preferred orderings- across sentence types.

- **Semantic Connectedness?** – Yes
  - Forms an idiom or a collocation – “took into account”
Weight

- General Observation: Put “heavy” items on sentence boundaries

- Why?
- Grammatical Rule references weight?
  - Phonology and syntax computed simultaneously?
  - Belletti and Schlonsky’s (1995), Akasaka and Tateishi (2001), among others

- Extra time to plan? Wasow (1997)
- Earlier activation of shorter constituents?

- Early Immediate Constituents Hawkins (1994)
  - 1a) Give the sailor the cup that is filled with juice.
  - b) Give the cup that is filled with juice to the sailor.

- Phonological Length vs. Syntactic Complexity
  - Pal.e.on.to.lo.gy vs. lit.tle girl’s bi.cy.cle
  - Wasow and Arnold (2003): little of both
Information Structure and Focus

- **General observation** Given Before New? New at Sent. Boundaries?

- **Why?**

- **Production:**
  - Old constituents more activated than new? *Wasow and Arnold (2003)*
  - Extra time to plan? *Wasow (1997)*
  - Principle of Task Urgency: New before Given *Givón’s (1983, 1988)*

- **Comprehension:**
  - Ease of processing? (Smother Discourses)
    - Topic before Comment *Gundel (1988)*
    - Functional Sentence Perspective
Does the Type of Focus Matter?

- Two types discussed in literature
  - Information Focus and Contrastive Focus

- Can any type of focus motivate the dative alternation?
  - Arnold et al (2000): Information Focus motivates the Dative Alternation
Current Study: Research Questions

- Does **weight** influence the dative alternation?
  - Previous literature gives strong support for this.
  - We expect to replicate these results and find that heavy items appear on sentence boundaries.

- Does the **type of focus** matter?
  - Will information focus and contrastive focus behave the same?

- Does **focus** influence the dative alternation?
  - Less support for this, but still attested.
  - We expect to replicate these results and find that focused items appear on sentence boundaries.

- Is there an **interaction** between weight and focus?
  - If both are factors, can one be said to be a stronger motivator than the other?
Current Study: Production task

- Two Experiments
  - Both: 8 conditions from a 2 x 2 x 2 design

- The three two-level factors we manipulated were:
  - #1 Weight (light vs heavy)
    - Exp. 1: Weight of the Theme
      - **Light**: 1 or 2 syllable noun
        - cup; apple
      - **Heavy**: “that” clause modifier
        - cup that is filled with juice; apple that is half eaten
    - Exp. 2: Weight of the Recipient
      - **Light**: 1 or 2 syllable career title
        - sailor; builder
      - **Heavy**: “who” clause modifier
        - sailor who enjoys writing; builder who is in school

- #2 Focused Argument (theme vs. recipient)
  - Only Narrow Focus
    - Theme: Give the sailor **the cup**.
    - Recipient: Give the cup to **the sailor**.

- #3 Focus Type (contrastive focus vs. new information focus)
Information Focus Trials: Exp.1

- Has: 1 theme, 1 recipient
  - Light Information:
    - sailor
    - cup
    Potential responses:
      - Dative: Give [the sailor] [the cup].
      - PP-frame: Give [the cup] [to the sailor].

- Heavy Information:
  - sailor
  - cup that is filled with juice
  Potential Responses:
    - Dative: Give [the sailor] [the cup that is filled with juice].
    - PP-frame: Give [the cup that is filled with juice] [to the sailor].
Information Focus Trials: Exp.2

- Has: 1 theme, 1 recipient
  - Light Information:
    sailor  cup
    Potential responses:
    Dative: Give [the sailor] [the cup].
    PP-frame: Give [the cup] [to the sailor].

- Heavy Information:
  sailor who enjoys writing  cup
  Potential Responses:
  Dative: Give [the sailor who enjoys writing] [the cup].
  PP-frame: Give [the cup] [to the sailor who enjoys writing].
Information Focus : Summary

- Trials balanced for screen orientation.

- A sample conversation:
  
  (Fig. 1 appears on the screen.)
  Asker: There's the sailor. What should the sailor get?
  (The word “cup” appears in the second box, written in white.)
  Participant: Give the sailor the cup.
  (The box with the word “cup” in it moves as in Fig. 2.)
  Participant: Yes.

Fig. 1

![Fig. 1](image1)

sailor

Fig. 2

![Fig. 2](image2)
sailor

cup
Contrastive Focus Trials: Exp. 1

- Has: 1 recipient, 3 themes
  3a) Heavy Contrastive Theme: sailor
     cup that is filled with juice
cup that is filled with wine
cup that is filled with soda
  b) Light Contrastive Theme: sailor
cup
hat
rag

- Or Has: 1 theme, 3 recipients
  c) Heavy Contrastive Recipient: sailor
     artist
diver
cup that is filled with juice
  d) Light Contrastive Recipient: sailor
     artist
diver
cup
Contrastive Focus Trials: Exp. 2

- **Has: 1 recipient, 3 themes**
  3a) Heavy Contrastive Theme: sailor who enjoys writing cup hat rag
  
  b) Light Contrastive Theme: sailor cup hat rag

- **Or Has: 1 theme, 3 recipients**
  c) Heavy Contrastive Recipient: sailor who enjoys writing cup
     sailor who enjoys eating
     sailor who enjoys talking
  
  d) Light Contrastive Recipient: sailor cup
     artist
diver
Contrastive Focus: Summary

- Trials balanced for screen orientation.

- A sample conversation:

  (Fig. 3 appears on the screen.)
  
  Asker: There’s the cup, the hat, the rag, and the sailor.
  
  (The word “cup” changes to white type.)
  
  Asker: What should the sailor get?
  
  Participant: Give the cup to the sailor.
  
  (The box with the word “rag” in it moves as in Fig. 4.)
  
  Participant: No, give the sailor the cup.
  
  (The box with the word “cup” in it moves.)
  
  Participant: Yes.
Current Study: Results: Exp. 1

Dative: Give [recipient the sailor] [theme the cup].

PP-frame: Give [theme the cup] [recipient to the sailor].

Proportion of Datives by Condition

- Heavy Con Theme
- Heavy Con Rec.
- Heavy Info Theme
- Heavy Info Rec.
- Light Con Theme
- Light Con Rec.
- Light Info Theme
- Light Info Rec.
- Total Datives
Current Study: Results: Exp. 2

Dative: Give [recipient the sailor] [theme the cup].

PP-frame: Give [theme the cup] [recipient to the sailor].
Does \textbf{Weight} influence the Dative Alternation?

Asymmetry between Theme and Recipient:
- Theme: weight matters
- Recipient: weight doesn’t appear to matter
Exp. 1: Does Weight Influence the Dative Alternation? - Yes

- **Light:**
  - Dative: Give the sailor **the cup**.
    - 50%
  - PP-frame: Give **the cup** to the sailor.
    - 50%

- **Heavy:**
  - Dative: Give the sailor **the cup that is filled with juice**.
    - 60%
  - PP-frame: Give **the cup that is filled with juice** to the sailor.
    - 40%

![Proportion of Datives by Weight](image)
Exp. 2: Does Weight Influence the Dative Alternation? - No

- **Light:**
  - **Dative:** Give the sailor the cup. 59%
  - **PP-frame:** Give the cup to the sailor. 41%

- **Heavy:**
  - **Dative:** Give the sailor who enjoys writing the cup. 48%
  - **PP-frame:** Give the cup to the sailor who enjoys writing. 52%

![Proportion of Datives by Recipient Length](image-url)
Does **Focus Type** matter to the Dative Alternation?

No.
Exp. 1: Does Focus Type Influence the Dative Alternation? -No

- **Contrastive Focus:**
  - **Dative:** Give the sailor the cup. (not the hat or rag) 52%
  - **PP-frame:** Give the cup to the sailor. (not the artist or diver) 48%

- **Information Focus:**
  - **Dative:** Give the sailor the cup. 58%
  - **PP-frame:** Give the cup to the sailor. 42%
Exp. 2: Does Focus Type Influence the Dative Alternation? - No

- **Contrastive Focus:**
  - Dative: Give the sailor *the cup*. (not the hat or rag) \(50\%\)
  - PP-frame: Give *the cup* to the sailor. (not the artist or diver) \(50\%\)

- **Information Focus:**
  - Dative: Give *the sailor* the cup. \(53\%\)
  - PP-frame: Give the *cup* to the *sailor*. \(47\%\)

### Proportion of Datives by Focus Type

<table>
<thead>
<tr>
<th>Focus Type</th>
<th>Proportion of Datives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrastive</td>
<td>0.5</td>
</tr>
<tr>
<td>Information</td>
<td>0.5</td>
</tr>
</tbody>
</table>
Does Focus (collapsed across types) influence the Dative Alternation?

Yes.
Exp. 1: Does Focus Influence the Dative Alternation? - Yes

- **Focused Theme:**
  - **Dative:** Give the sailor the cup. 63%
  - **PP-frame:** Give the cup to the sailor. 37%

- **Focused Recipient:**
  - **Dative:** Give the sailor the cup. 48%
  - **PP-frame:** Give the cup to the sailor. 52%
Exp. 2: Does Focus Influence the Dative Alternation? -Yes

- **Focused Theme:**
  - **Dative:** Give the sailor the cup. 65%
  - **PP-frame:** Give the cup to the sailor. 35%
- **Focused Recipient:**
  - **Dative:** Give the sailor the cup. 37%
  - **PP-frame:** Give the cup to the sailor. 63%

![Proportion of Datives by Focused Argument](chart.png)
Results Summary

- Does weight influence the dative alternation?
  - Depends on the which argument is heavy
  - Heavy themes are more likely to appear sentence, but heavy recipients do not seem more likely to appear sentence finally.

- Does the type of focus matter?
  - No
  - Neither information nor contrastive focus appear at this time to influence the dative alternation more than the other.

- Does focus (collapsed across types) influence the dative alternation?
  - Yes
  - Focused constituents are more likely to appear sentence finally.
Discussion: Implications for Word Order Theories

- Focus needs to be considered
  - Theories of word order variation may need to consider weight as well.
  - High correlation between newness and length.
    - Didn’t exist in this study, yet still found an effect.
    - Some previous findings for weight might actually be findings for focus.
      - Wasow and Arnold 2003: interaction between weight and focus
Discussion: Implications for Theories of Weight

- What are the weight considerations?
  - Activation and Planning Accounts:
    - Japanese Problem
      - Japanese type languages move focused and heavy constituents to the left periphery of a sentence.
  - Prosody
    - Now: doesn’t account for the dominance of focus over weight.
    - But could be adjusted to account for this.
  - Early Immediate Constituents
    - Processing based- but may not be problematic
    - Needs to be able to consider focus
Conclusion

Results: For the English dative alternation,

- Focus matters.
- Weight matters for the theme, but not for the recipient.
- Information and Contrastive focus do not pattern differently.

Focus needs to be considered

- Weight also needs to be considered for the theme, but possibly not for the recipient.
References

- den Dikken, Marcel. 1995. Extrapolation as intraposition and the syntax of English tag questions. MS.


References

- McDonald, Maryellen, Neal Pearlmutter, and Mark Seidenberg. 1994. The lexical nature of syntactic ambiguity resolution. Psychology Review 1014: 676-703