Is Contrastive Accenting Really *Contrastive?*: Effects of Contrastive Accenting on Processing in a Discourse

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PRIOR WORK & RATIONALE

L+H* pitch accent:
- Has been argued to have **contrastive** reading (e.g. Pierrehumbert & Hirschberg, 1990)
- Cues attention to contrast items in online processing (Watson et al., 2008; Braun et al., 2008)

Present study:
- Do pitch accents have consequences for **memory**?
- **How** do pitch accents affect long-term representation of a discourse?

STIMULI & STUDY PHASE

Auditory presentation of stories containing **two contrast sets**:

"To win the hand of the baron's daughter, the English knight and the Scottish knight competed in a tournament of jousting and archery. Both knights gave it their best, but the _____ knight emerged victorious during the _____ competition and married the daughter."

Contrast Set 1: "English" or "Scottish"

Contrast Set 2: "Jousting" or "Archery"

Manipulated type of pitch accent on each referent:
Presentational accent (**H*** in ToBI)
or **contrastive accent** (**L+H***)

TEST PHASE after listening to all stories.

EXPERIMENT 1 – TEST PHASE (30 MIN. LATER)

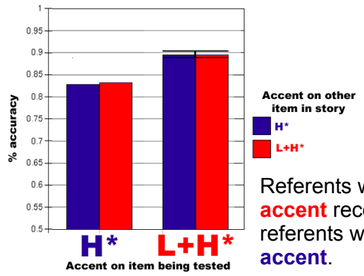
Visual presentation with **forced choice recognition test**:

To win the hand of the baron's daughter, the English knight and the Scottish knight competed in a tournament of jousting and archery. Both knights gave it their best, but the ___(A)___ knight emerged victorious during the __(B)___ competition and married the daughter.

(A) *ENGLISH* or *SCOTTISH*?

(B) *JOUSTING* or *ARCHERY*?

EXPERIMENT 1 – RESULTS



Referents with **L+H* (contrastive) accent** recognized **better** than referents with **H* (presentational) accent**.

No effect of the accent that was on the **other referent**.

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EXPERIMENT 2 – TEST PHASE (1 DAY LATER)

Visual presentation of **true-false verification task**

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The English knight won the tournament and married the baron's daughter.

TRUE or FALSE?

The tournament to marry the baron's daughter was decided during the jousting competition.

TRUE or FALSE?

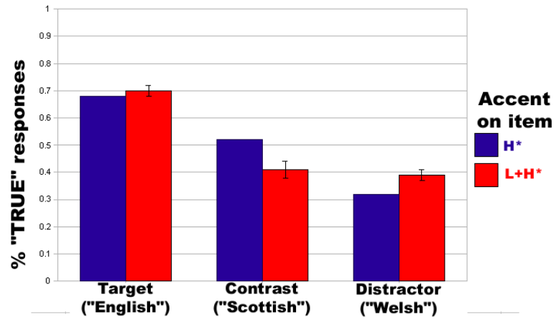
3 types of test possible:

Target Referent: "The English knight won..."

Contrast Item: "The Scottish knight won..."

Unmentioned Distractor: "The Welsh knight won..."

EXPERIMENT 2 – RESULTS



Replicated benefit in memory from **L+H*** accent.

L+H*:
- No **increase in hits** to target referent
- But **facilitated rejections** of contrast item

As predicted if **L+H*** is **contrastive**.

CONCLUSION

Pitch accenting has effects on **long-term memory** for a discourse.
- Even a day later!

Benefit in memory from **L+H*** accent seems to come from **facilitating rejections of contrast item**.
- Supports idea that **L+H*** is **contrastive**.

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Data and References

EXPERIMENT 1 -- MEANS

% accuracy

Stress on referent being tested	Stress on other referent: H*	Stress on other referent: L+H*
H*	83%	90%
L+H*	83%	90%

EXPERIMENT 2 -- MEANS

% of TRUE responses

Stress on referent being tested	Test type: Correct referent	Test type: Contrast item	Test type: Distractor
H*	68%	52%	32%
L+H*	70%	41%	39%
Correct response is	TRUE	FALSE	FALSE

REFERENCES

Braun, B., & Tagliapietra, L. (2008, April). Contrastive utterances make alternatives salient: Evidence from cross-modal priming. Paper presented at Experimental and Theoretical Advances in Prosody, Ithaca, NY.

Pierrehumbert, J. & Hirschberg,J. (1990). The meaning of intonational contours in the interpretation of discourse. In P. Cohen, J. Morgan, and M. Pollack, (eds), *Intentions in Communication* (pp. 271-311). Cambridge, MA: MIT Press.

Watson, D., Gunlogson, C., & Tanenhaus, M. (2008). Interpreting pitch accents in on-line comprehension: H* vs L+H*. *Cognitive Science*, *32*, 1232-1244.

EXPERIMENT 1 -- STATISTICS

Reliable effect of pitch accent type on referent being tested:

$F_{1(1,19)} = 13.27$, $p < .01$

$F_{2(1,39)} = 26.05$, $p < .001$

No effect of pitch accent type on *other* referent:

$F_{1(1,19)} = 0.93$, $p = .35$

$F_{2(1,39)} = 0.73$, $p = .40$

No effect of position in the story:

$F_{1(1,19)} = 2.29$, $p = .15$

$F_{2(1,39)} = 1.44$, $p = .24$

All interactions n.s., F_1s and F_2s all < 1

EXPERIMENT 2 -- STATISTICS

Interaction between test type and accent type is reliable by subjects but not by items

$F_{1(2,25)} = 7.82$, $p < .01$

$F_{2(2,12)} = 2.44$, $p = .13$