Says who? The influence of speech and mental predicates on epithet interpretation

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Shifting Epithets

What factors produce shifted epithet attribution?

The Puzzle of Judgment

- **Epithets** (*that dork*) contribute the attitude of a **judge** toward their referent [8].

- This judge is usually the **speaker** of the utterance ("Narrator").

  (1)   That dork Joshua got an A in Stats.

- In some contexts, including embedding under a speech predicate (SP), a **shifted interpretation** is available (2), e.g. Marie, and not the narrator, thinks Joshua is a dork.

  (2)   Marie said that dork Joshua got an A in Stats.

- Shifting can also occur **outside of embedding** (3) (cf. [9]).

  (3)   Marie said her brother Joshua got an A in Stats.
         That dork stayed up all night studying.

Shifted interpretations are influenced by:

- type of embedding: SPs or mental predicates (MPs) [7]
- characters' emotions: matching the epithet or not [6]

How are these shifted interpretations made available?

Grammar vs. Independent Cognition

- Two major hypotheses in the literature suggest that optional shifting of epithets is produced by:

  (a)   optional binding under operators associated with context-shifting predicates (CSPs) [9], a la shifting indexicals [2];

  (b)   selection from among the set of salient individuals in the discourse [6, 7].

- Neither of these hypotheses account for the intuition that **non-embedded shifted interpretations seem reliant on a CSP in preceding discourse**: no Marie-judge reading in (4), c.f. (3).

  (4)   Marie's brother Joshua got an A in Stats.
         That dork stayed up all night studying.

- I test this intuition in two forced-choice interpretation experiments, and suggest altered versions of these two hypotheses that can account for this effect:

  (a)   CSPs may provide context representations which are accessible in discourse rather than structure;

  (b)   pragmatic reasoning may occur over **minds**, restricting potential judges to only those modeled in language-independent theory of mind (ToM) systems [5].

Hypotheses

Grammar: Context-shifting predicates introduce shifted context representations into discourse that provide optional judges for epithets.

ToM: Minds of some agents in discourse are modeled in theory of mind, and are available as optional judges for epithets.

Experiment 1: Can Predicates Influence Shifting Across Sentence Boundaries? (*N* = 16)

I collected judge interpretations on MechanicalTurk for 16 items with either **no embedding predicate (NP)** (a) or a **SP** (b).

(5)   a.   Miranda's supervisor gave her a negative performance review. The dirtbag is only nice to his tennis buddies.
       b.   Miranda said that her supervisor gave her a negative performance review. The dirtbag is only nice to his tennis buddies.

       Miranda's supervisor is a "dirtbag" according to who?
       (Miranda, the narrator)

Prediction: Both the Grammar and ToM hypotheses predict that a SP might increase shifting.

Discussion: More participants indicated a shifted interpretation with a SP than without. This supports the intuition that CSPs in preceding discourse are relevant to epithet interpretation.
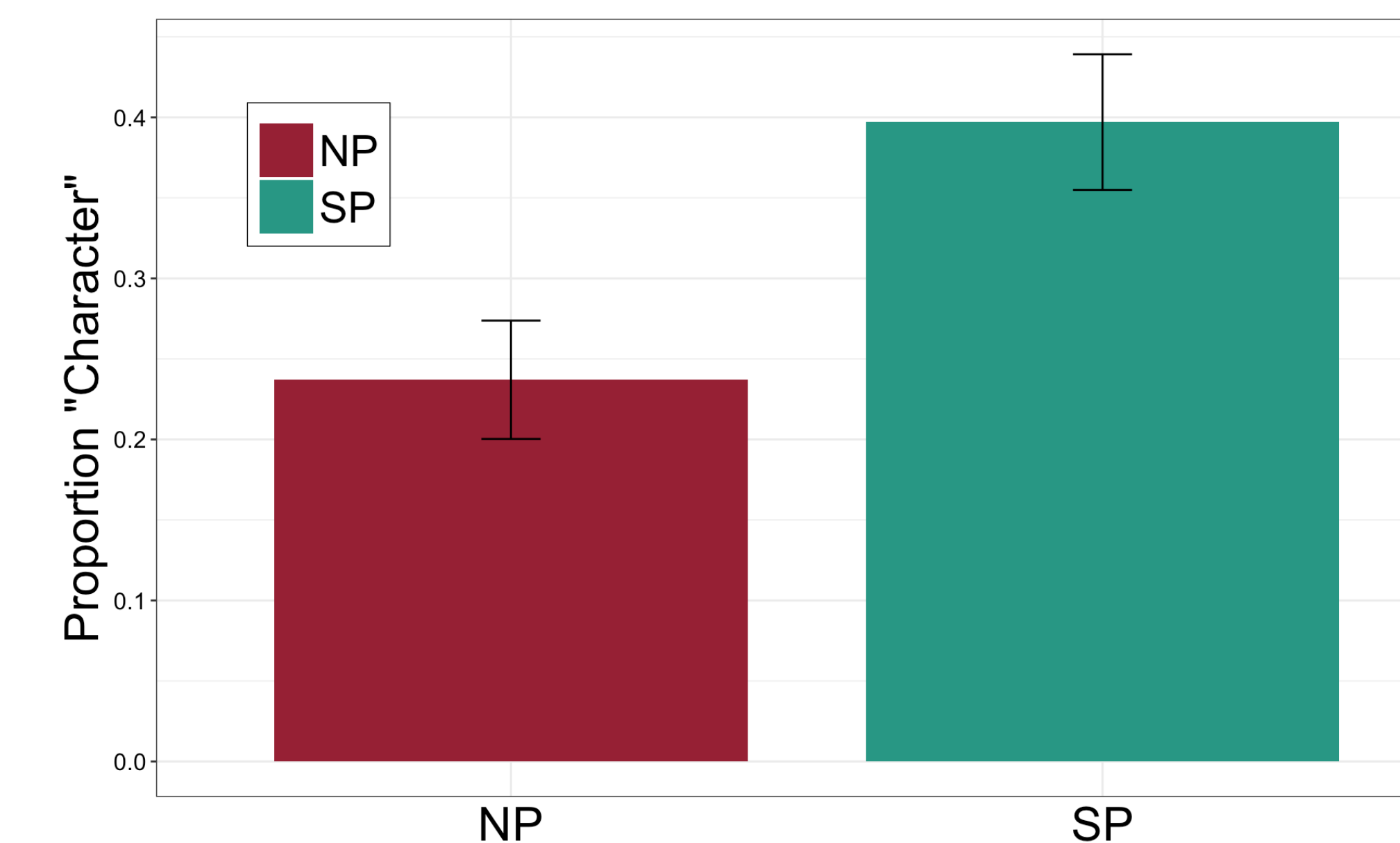

Figure 1: Proportion "Character" responses by condition.

Effect	Estimate	Statistic	p
Distance	0.81	z = 2.51	.012

Table 1: Effect from logistic mixed-effects regression on responses.

Experiment 2: Do Speech and Mental Action Behave Differently? (*N* = 23)

I followed up Expt. 1 by adding an **MP**-embedding condition, (5c), collecting judge interpretations for 18 items.

(5)   c.   Miranda knew that her supervisor gave her a negative performance review. The dirtbag is only nice to his tennis buddies.

       Miranda's supervisor is a "dirtbag" according to who?
       (Miranda, the narrator)

The items were presented in two between-subject conditions, either as in (5) or with preposed *My friend* to make the first-person narrator more explicit (**-FP and +FP**).

Prediction: The Grammar hypothesis, given existing research into context-shifting and logophoricity [2, 4], would predict **SPs as a stronger host** for shifted readings than MPs, unlike ToM.

Discussion: No effect was found for the FP manipulation. A trend replicates the SP effect of E1, and **MPs also increase shifting, more so than SPs** in a post hoc analysis. This contradicts the predictions of the Grammar hypothesis, but could be explained by ToM, or other explanations motivated by content, as **MPs explicitly introduce the mind of their subject**.
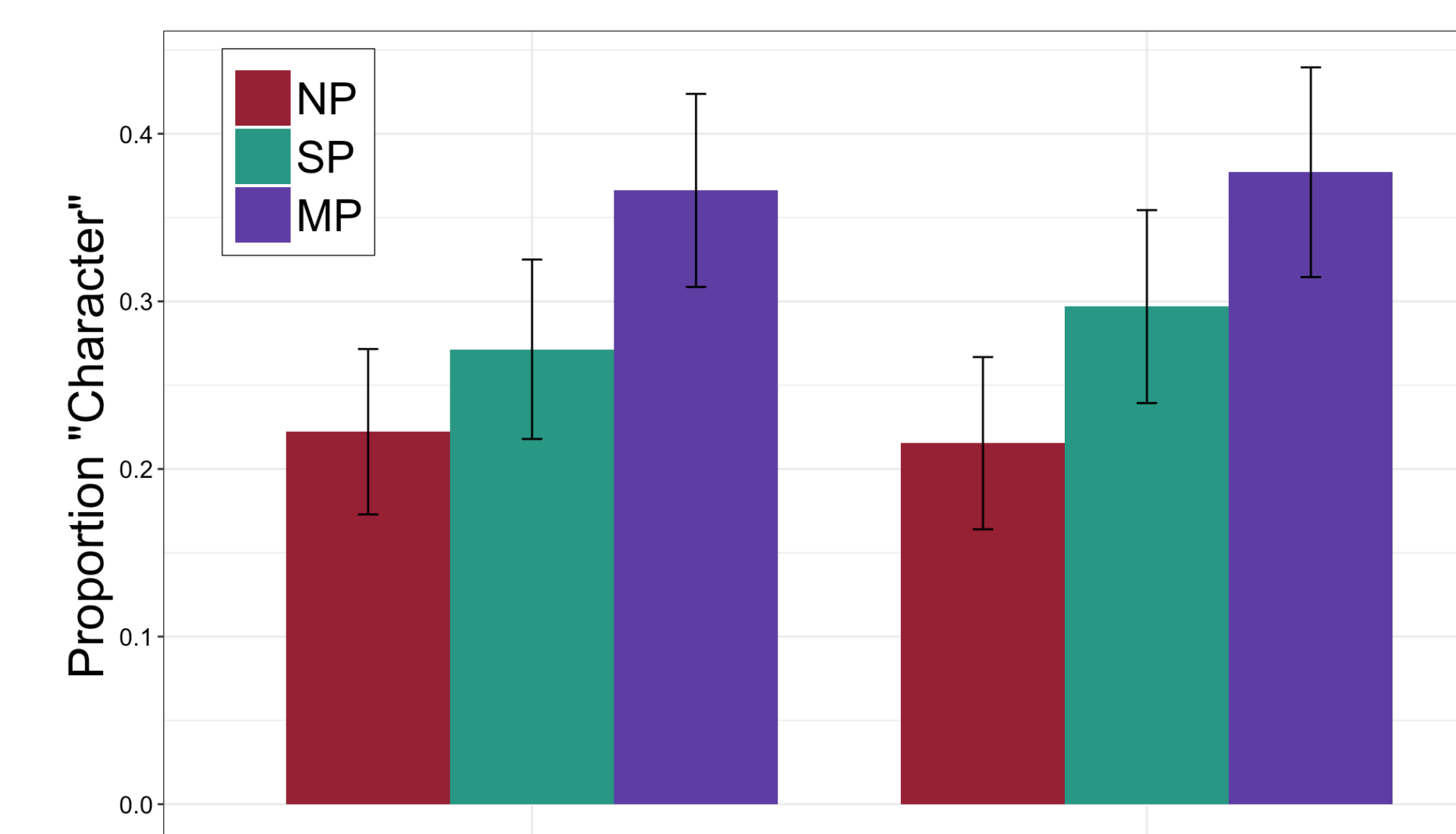

Figure 2: Proportion "Character" responses by condition.

Effect	Estimate	Statistic	p
First-Person	-0.19	z = -0.14	.885
NP v. SP	1.81	z = 1.71	.087
NP v. MP	2.69	z = 2.47	.013
SP v. MP (post hoc)	0.62	z = 1.96	.0495

Table 2: Effects from logistic mixed-effects regression on response.

Investigating Persistent Non-Shifting

In Expts. 1 and 2, almost half of the participants sampled **failed to provide any shifted responses**. They were excluded from analysis with the assumption that they represented a separate population who somehow do not permit this variation in interpretation.

In a follow-up pilot, demographic variables were measured alongside a similar task to investigate the potential predictive value of:

- Exposure to literature, as measured by the Author Recognition Task [1,10]
- Communication and Imagination scores on the Autism Quotient [3]
- Openness scores on the BFI

None of these served as significant predictors in logistic regression for participants' willingness to shift.

Conclusions

Shifted attributions of epithets are influenced by the presence of SPs and MPs in prior discourse.

This suggests epithets are dependent on the **lexical structure or mental notion associated with certain predicates**.

MPs lead to more shifts, suggesting that the representation of mental content, and not a grammatical operator, introduces possible judges (ToM hypothesis).

Individual differences in consideration of shifted attributions in English suggest separate populations, but are unexplained by demographic measurements.

References

[1] Acheson, D. J. et al. 2008. New and updated tests of print exposure and reading abilities in college students. *Behavioral Research Methods 40*: 279-89. [2] Anand, P. & Nevins, A. 2004. Shifty operators in changing contexts. *Proceedings of SALT 14*: 20-37. [3] Baron-Cohen, S. 2001. The Autism-Spectrum Quotient (AQ). *Journal of Autism and Developmental Disorders 31*. [4] Culy, C. 1994. Aspects of logophoric marking. Linguistics 32: 1055-94. [5] Koster-Hale, J. & Saxe, R. 2013. Functional neuro-imaging of theory of mind. In S. Baron-Cohen et al. (Eds.) *Understanding other minds*: 132-63. [6] Harris, J. A. & Potts, C. 2009. Perspective-shifting with appositives and expressives. *Linguistics and Philosophy 32*: 523-52. [7] Harris, J. A. 2012. *Processing perspectives*. Diss. University of Massachusetts, Amherst. [8] Potts, C. 2007. The expressive dimension. *Theoretical Linguistics 33*: 165-98. [9] Schlenker, P. 2007. Expressive presuppositions. *Theoretical Linguistics 33*: 237-45. [10] Stanovich, K. E. 1989. Exposure to print and orthographic processing. *Reading Research Quarterly 24*: 402-33.