

Post-focal reduction of gestural prominence, gesture presence and stroke alignment

THE FOCAL & POST-FOCAL DOMAIN

Higher pragmatic prominence (e.g., focus)



Higher prosodic & gestural prominence

[1, 2, 3, 4, 5, 6, 7]



How did Alina get onto the rock?

[4, 8]



Alina [climbed]_F [onto the rock]_{PF}

RQ1: Is multimodal prominence reduced in the post-focal domain?

DEGREES OF CONTRASTIVITY

[9]

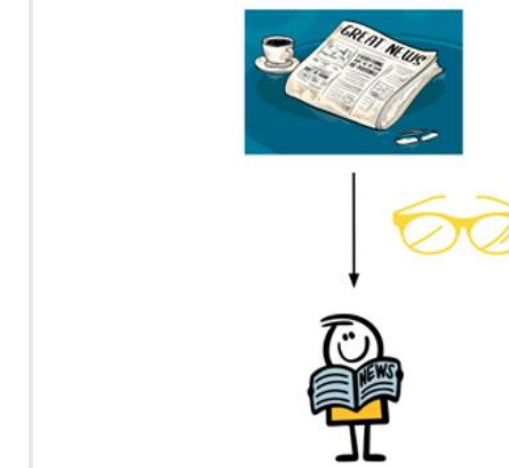
background information contrastive corrective

RQ2: Is the amount of post-focal reduction correlated with the degree of contrastivity in focus?

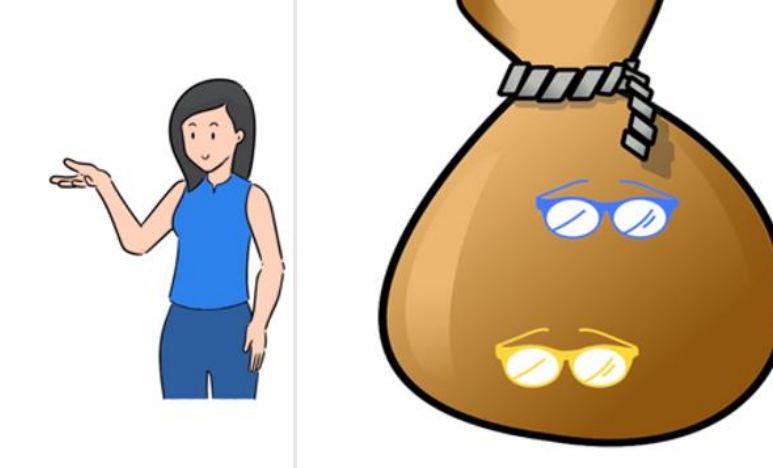
DATABASE: THE MULTIFOCUS CORPUS^[10]

- Semi-spontaneous focus elicitation task cf. [11]
- 35 German speakers
- 895 utterances
- Focus with increasing contrastivity [9]
- target domains: focal adjective & post-focal noun
- Annotation: gestures, gestural & prosodic prominence

When you see her bag, tell Maria which object she must take.



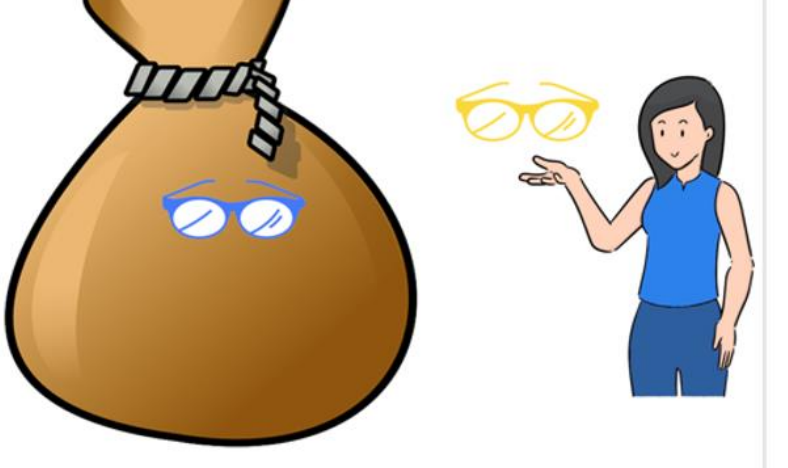
1. Context slide with target object.



2. Object(s) prompted and instruction from the participant (contrastive focus)
Maria, take the yellow glasses.



3. Maria makes a mistake and the participant corrects her (corrective focus)
No, Maria, take the yellow glasses!



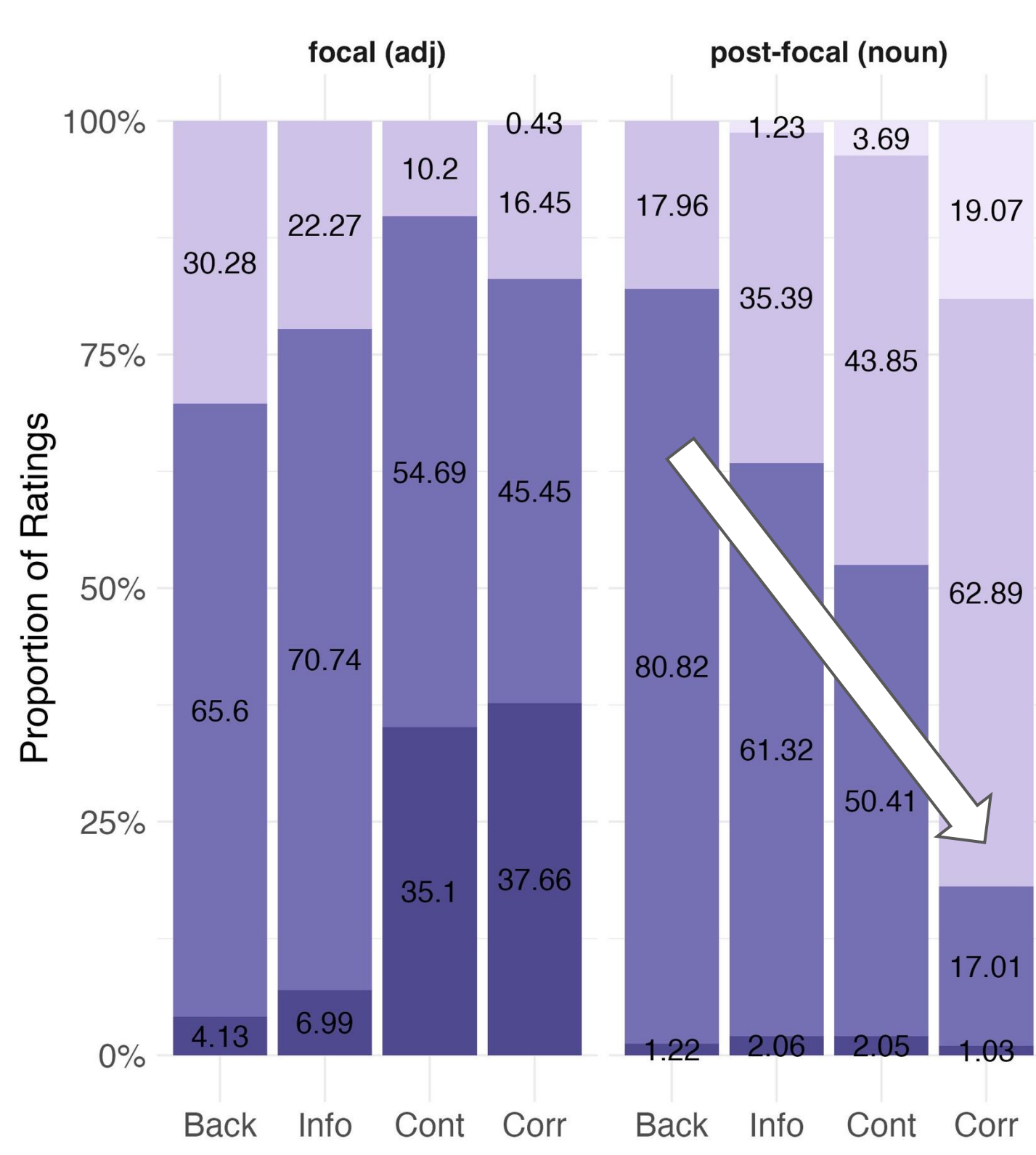
4. Maria takes the correct object.

MULTIMODAL PROMINENCE & PRESENCE

- Ratings based on M3D (gesture [12]) and DIMA (prosody [13])
- Higher rating = higher perceived prominence (0 - 3)
- shows reliable Bayesian effects

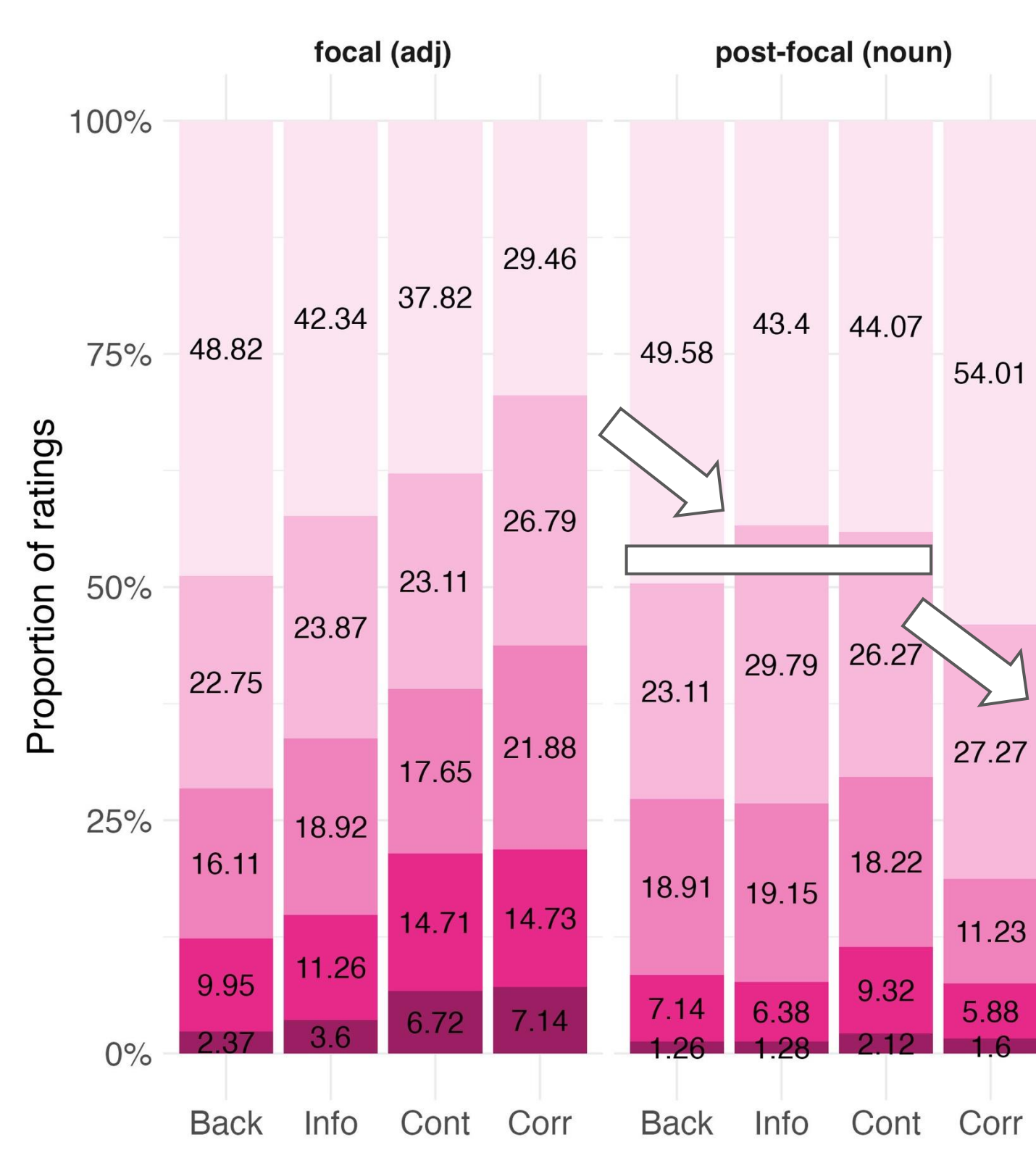
Prosody: focal & post-focal domain

Prosodic Prominence 0 1 2 3

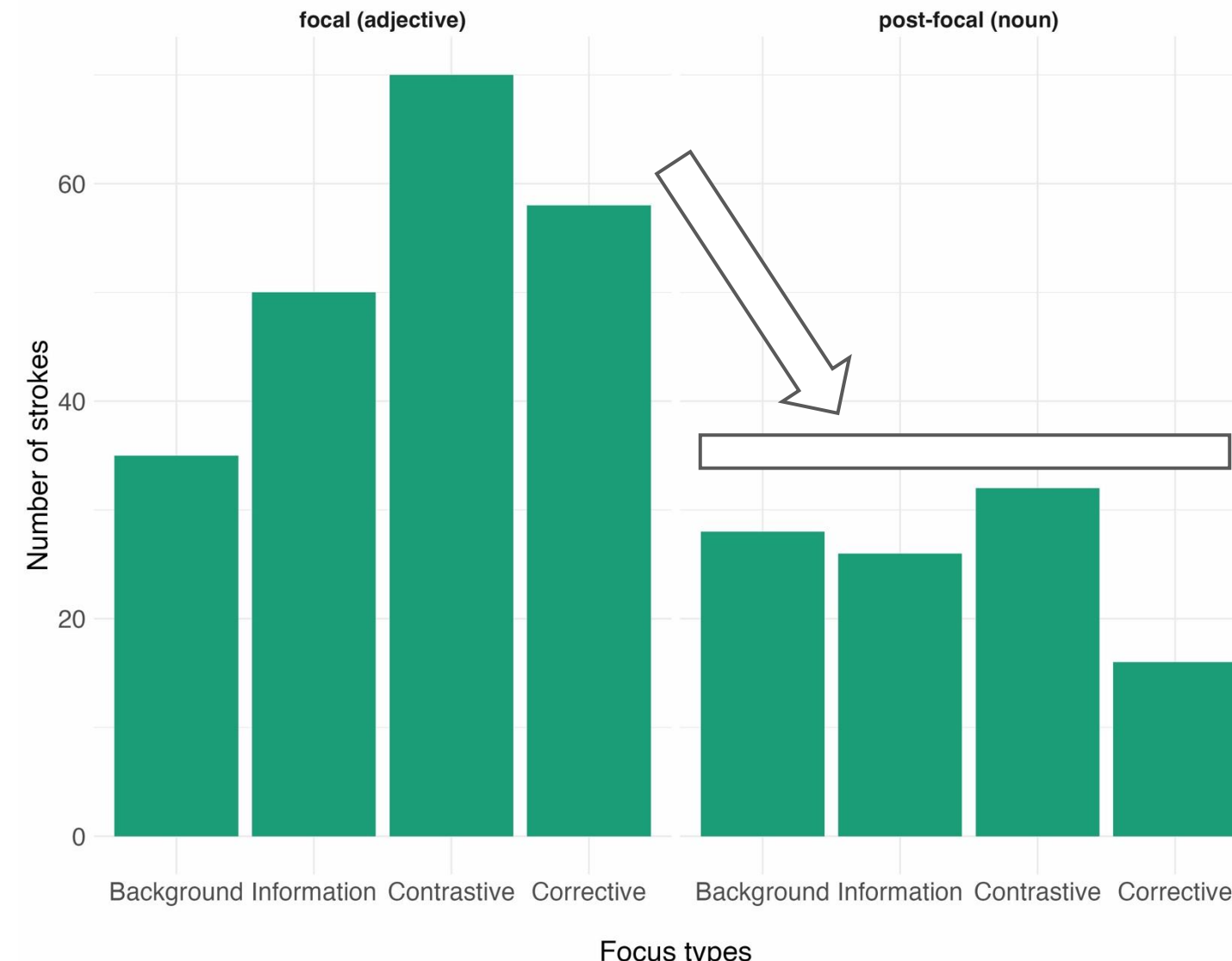


Gesture: focal & post-focal domain

Gestural Prominence None 0 1 2 3



Number of manual gestures per word and focus type



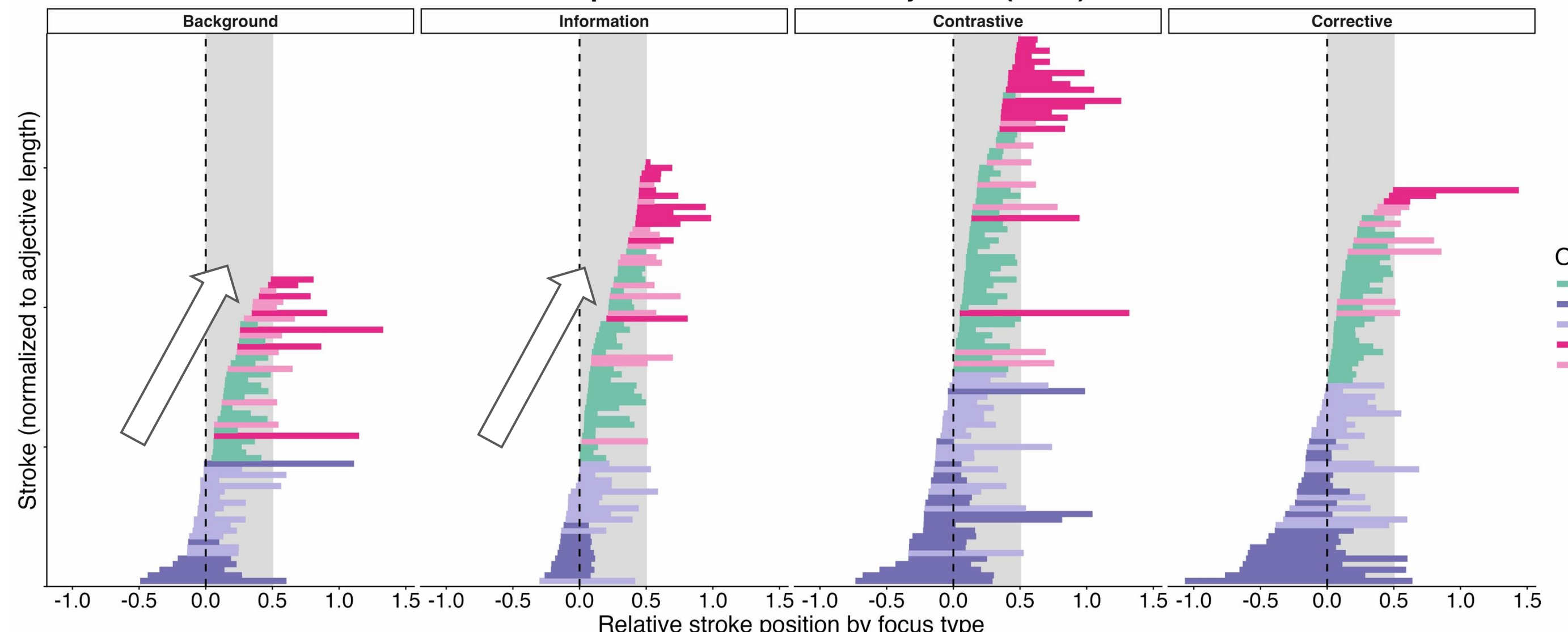
- Gesture strokes annotated
- Count of gesture strokes on target domain
- No stroke that overlaps with both domains counted

STROKE ALIGNMENT

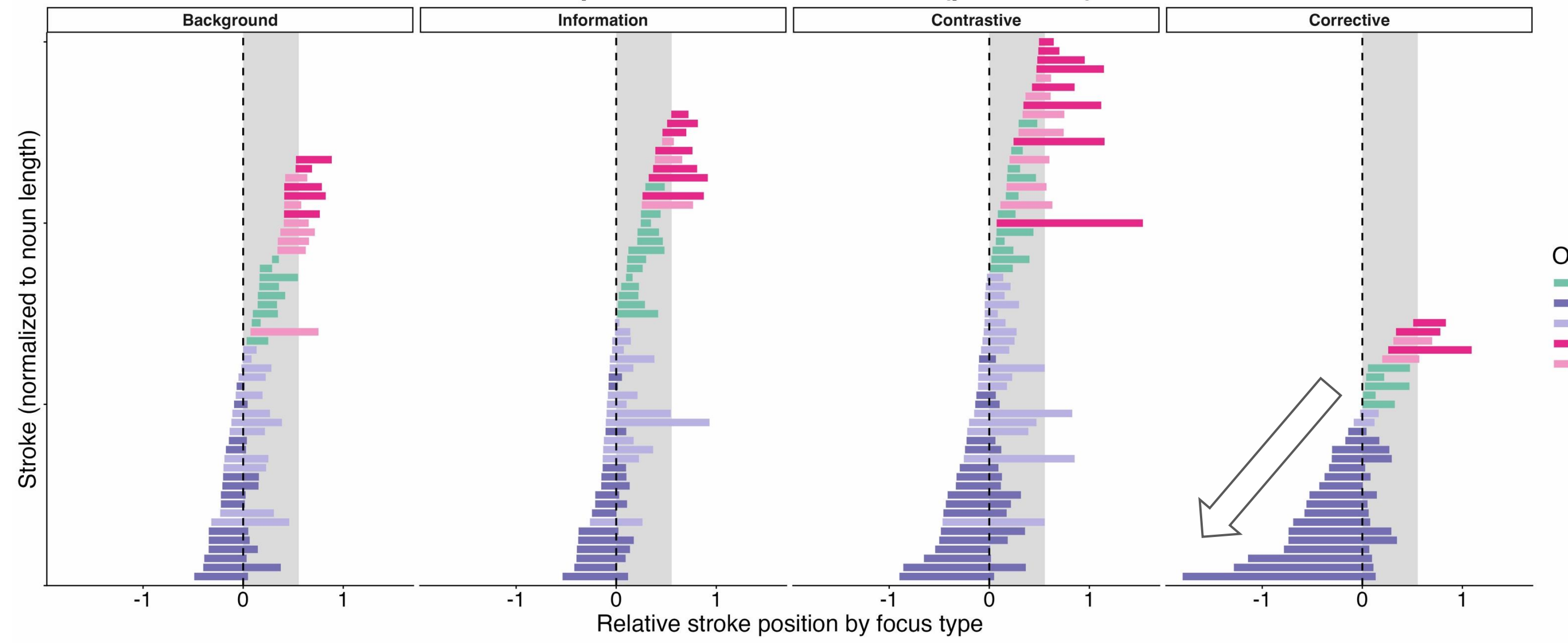
- Normalized stroke position relative to target word
- Centered on word
- Noun-preceding stroke indicates stroke towards adjective

Word	Adjective			Noun		
	before	on	after	before	on	after
Timing						
Back	40%	30.9%	29.1%	54.2%	18.7%	27.1%
Info	28.9%	38.2%	32.9%	55.7%	25%	19.3%
Cont	38.8%	36.7%	24.5%	56.6%	18.4%	25%
Corr	50.7%	35.2%	24.1%	65.5%	17.3%	17.2%

Stroke position centered on adjective (focal)



Stroke position centered on noun (post-focal)



DISCUSSION

- Post-focal strength is expressed multimodally: prosodic & gestural prominence, gesture presence and stroke alignment are reduced
- Degrees of contrastivity modulate stroke alignment, prosodic and gestural prominence across focus domains, but not presence
- Supports a relational multimodal account of linguistic prominence
- A new measure of stroke alignment (beyond mere presence) confirms post-focal strength reduction

RQ1: Yes, multimodal prominence is reduced in the post-focal domain

RQ2: Yes, but the measures represent different details in the degrees of contrastivity marked

References

