

Revisiting how contrast and prominence link: A laboratory phonologist's view

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Contrast, or the highlighting of what is said in relation to what could be said, plays a crucial role in conveying pragmatic meaning in discourse. In this talk, I revisit this statement: “[*the*] pragmatic effects of contrastiveness arise because speakers use probabilistic expectations about the prosody/information structure interface precisely in order to get ...pragmatic effects. Speakers indicate through the manipulation of expected prominence that their utterance means more than its propositional content/information structure suggests. This draws attention to the contrastiveness of the [contrastive focus] and therefore intended implicatures arising from the presupposition of its alternative set.” (Calhoun, 2009 [1], p. 61; see also [2]). In the time since, psycholinguistic research has established contrastive marking activates alternatives in discourse, prima facie evidence for the cognitive reality of this proposal. Further, an astonishing range of factors have been shown play a role in shaping such probabilistic expectations across languages, including segmental and suprasegmental phonetic detail, syntactic and semantic cues, gesture and (multi-)lingual experience. I offer a laboratory phonologist's view on how the conception of pragmatic contrast above might help us pull together these findings, and shed light on what prominence is.

In the past decade or so, psycholinguistic evidence has burgeoned for the processing effects of contrast consistent with Rooth's [3] Alternative Semantics [4]. Contrastive prominence on a word strengthens priming of contrastive alternatives to that word, while non-contrastive semantic associates are either not affected or suppressed, e.g. *He photographed a FLAMINGO* increases priming of *pelican* but not *pink* relative to *He photographed a flamingo*, in languages including Dutch [5], English [6,7] and Mandarin Chinese [8,9]. Related effects in discourse contexts have been shown in English [11,12], German [4,12] and Vietnamese [13]. Parallel findings in Samoan with syntactic clefting show these effects are not specific to prosodic prominence, but language-specific contrast marking [14]. Recently, we have shown the primed alternative set is surprisingly wide, including semantically unrelated alternatives, e.g. *farmer* in the example above [7]. This establishes that listeners infer from contrast that the speaker intends them to evaluate a potentially wide range of alternatives in inferring pragmatic meanings. However, these studies largely use unambiguous contrast marking (e.g. contrastive pitch accent, cleft), and much remains to be understood about how this works with a wider range of potential cues.

Many factors have now been shown to affect the production and perception of contrast across languages. These include subtle phonetic prominence cues at the suprasegmental and segmental level, e.g. [15]. Prosodic prominence and syntactic clefting as cues to contrast (or focus) are weighted differently in different languages, both when these cues seem to function similarly (English and Mandarin), and when they do not (Samoan) [16,17]. These cross-linguistic differences further affect the perception of prominence itself [16]. There are also crucial perceptual differences depending on the grammatical role of the intended contrast, subject or object [7,11], and the semantic verb type [18]. Weightings are different again for L2 listeners, showing influence of L1 and L2 [17], and can change in language contact situations, e.g. over time in te reo Māori [19]. Multimodal cues are also important, e.g. the temporal synchronisation between gesture and prosodic structure is tighter in focal regions in Turkish [20,21].

Why are there so many cues, and how do speakers and listeners make sense of them? I suggest that we may make progress by considering how contrastive signalling works on a pragmatic level, as drawing attention to intended implicature using probabilistic expectations about prominence. This in turn may help in developing a more holistic understanding of what prominence is, from the phonetic to structural levels.

References

- [1] Calhoun, S. (2009). What makes a word contrastive? Prosodic, Semantic and Pragmatic Perspectives. In D. Barth-Weingarten, N. Dehé & A. Wichmann (eds.) *Where prosody meets pragmatics: Research at the interface* (Studies in Pragmatics 8, pp. 53-78), Bingley: Emerald.
- [2] Calhoun, S. (2010). The centrality of metrical structure in signaling information structure: a probabilistic perspective. *Language* 86(1), 1-42.
- [3] Rooth, M. (1992). A theory of focus interpretation. *Natural Language Semantics*, 1, 75-116.
- [4] Gotzner, N., & Spalek, K. (2019). The life and times of focus alternatives: Tracing the activation of alternatives to a focused constituent in language comprehension. *Language and Linguistics Compass*, 13 (2), e12310.
- [5] Braun, B., & Tagliapietra, L. (2010). The role of contrastive intonation contours in the retrieval of contextual alternatives. *Language and Cognitive Processes*, 25 (7-9), 1024-1043.
- [6] Husband, E. M., & Ferreira, F. (2016). The role of selection in the comprehension of focus alternatives. *Language, Cognition and Neuroscience*, 31 (2), 217-235.
- [7] Calhoun, S., Yan, M. & White, H. (in revision). Examining focus and alternative priming: effects of grammatical role and breadth of the alternative set.
- [8] Yan, M., & Calhoun, S. (2019). Priming effects of focus in Mandarin Chinese. *Frontiers in Psychology*, 10, 1985.
- [9] Yan, M., Calhoun, S., & Warren, P. (2023). The role of prominence in activating focused words and their alternatives in Mandarin: Evidence from lexical priming and recognition memory. *Language and Speech*, 66(3), 678-705.
- [10] Fraundorf, S. H., Watson, D. G., & Benjamin, A. S. (2010). Recognition memory reveals just how CONTRASTIVE contrastive accenting really is. *Journal of Memory and Language*, 63 (3), 367-386.
- [11] Yan, M. & S. Calhoun (2020). Rejecting false alternatives in Chinese and English: the interaction of prosody, clefting and default focus position. *Laboratory Phonology* 11(1), 17. doi: 10.5334/labphon.255
- [12] Gotzner, N. (2017). *Alternative Sets in Language Processing*. Cham: Springer International Publishing.
- [13] Tjuka, A., Nguyen, H. T. T., & Spalek, K. (2020). Foxes, deer, and hedgehogs: The recall of focus alternatives in Vietnamese. *Laboratory Phonology*, 11 (1), 16.
- [14] Calhoun, S., M. Yan, H. Salanoa, F. Taupi & E. Kruse Va'ai (2023). Focus effects on immediate and delayed recognition of referents in Samoan. *Language and Speech* 66(1), 175-201.
- [15] Mitterer, H., Kim, S., & Cho, T. (2024). Use of segmental detail as a cue to prosodic structure in reference to information structure in German. *Journal of Phonetics*, 103, 101297.
- [16] Calhoun, S., E. Wollum & E. Kruse Va'ai (2021). Prosodic prominence and focus: expectation affects interpretation in Samoan and English. *Language and Speech*, 64(2), 346-380.
- [17] Yan, M., P. Warren & S. Calhoun (2022). Focus interpretation in L1 and L2: The role of prosodic prominence and clefting. *Applied Psycholinguistics*, 43(6), 1275-1303.
- [18] Calhoun, S., E. Cruz, & A. Olssen (2018). The interplay of information structure, semantics, prosody, and word ordering in Spanish intransitives. *Laboratory Phonology*, 9 (1), 8.
- [19] Calhoun, S., N. Yui & K. Kelly (2016). Change in Māori focus/topic *ko*: the impact of language contact on prosody. *Proc. of the 16th Australasian International Conference on Speech Science and Technology*, Sydney, December 2016, (pp. 69-72).
- [20] Türk, O. & Calhoun, S. (2023). Multimodal cues to intonational categories: Gesture apex coordination with tonal events. *Laboratory Phonology* 14(1).
- [21] Türk, O., & Calhoun, S. (2023). Phrasal synchronization of gesture with prosody and information structure. *Language and Speech*, doi:10.1177/00238309231185308