Syntactic focus activates mentioned and unmentioned alternatives in Samoan

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Key functions of focus-marking are to highlight focused words and contrastive alternatives to them. For example, *"The visitor ate the CAKE"* (caps mark accent) emphasizes the *cake* and implies alternatives the visitor didn't eat, e.g. *sandwiches*, that are relevant to the interpretation of the sentence (e.g. Rooth 1992). Consistent with this, a growing body of psycholinguistic evidence shows referents and their alternatives are more strongly activated when they are focus-marked than when they are not, whether or not the alternatives have been explicitly mentioned (e.g. Braun & Tagliapietra 2010, Fraundorf et al. 2010, Gotzner et al. 2016, Yan & Calhoun 2019). However, this evidence draws from a small number of languages, mostly Germanic, which primarily use prosodic prominence to mark focus (although some studies have looked at combinations of prosodic and morphosyntactic marking in these languages). We present the results of a probe recognition experiment (Gotzner et al. 2016) looking at activation of contrastive alternatives in the Austronesian language Samoan, which primarily uses syntactic focus marking (Calhoun 2015).

56 native speakers in Samoa heard short stories (see Table 1), which were said with neutral prosody. The context introduced alternatives to the subject and object in the critical sentence (e.g. people and foods). Then a continuation sentence repeated alternatives from each set so the number of their mentions was balanced across the story. In the critical sentence, an alternative to the object (e.g. *le keke* 'cake') was either focused or not using the cleft-like *'o*-fronting construction, which we have previously shown to be the primary marker of focus in Samoan in production and perception experiments (Calhoun 2015, Calhoun et al. 2019). Participants then saw a probe which was one of the object word, a mentioned or unmentioned alternative, or an unrelated control, and had to respond as quickly as possible whether the probe was in the story. There were 40 critical items, plus fillers with different story structures and probes.

A linear mixed effects model was built with logged response time as the dependent variable for the 1,901 correct responses. The final model included fixed effects of probe type, X^2 (3) = 81.9, p<0.0001; focus condition, X^2 (1) = 0.01, p=0.91; their interaction, X^2 (3) = 8.25, p=0.041; and the position of the trial in the experiment, X^2 (1) = 9.63, p=0.001; as well as random intercepts for participants and the probe word. The *step* function in the *lmerTest* package (Kuznetsova et al. 2017) was used to remove non-significant effects, which were the participants' gender, age and relative language dominance in Samoan versus English (almost all Samoan speakers are at least partly bilingual with English, Kruse Va'ai, 2011), as well as a random slope for the probe-focus interaction by participant. Figure 1 shows estimated RTs extracted from the model. Planned comparisons were carried out using *emmeans* (Lenth 2020) with the FDR correction.

The comparisons showed object probes were recognised faster than unrelated regardless of focus. However, for both mentioned and unmentioned probes, listeners were slower to correctly respond if the object was focused than not, compared to unrelated. Further, mentioned probes were faster than unmentioned only if the object was not focused. These findings show syntactic focus marking makes it harder to correctly distinguish mentioned and unmentioned alternatives; similar to what has previously been shown in Germanic (e.g. Gotzner et al. 2016). This is because focus-marking activates all plausible alternatives, including those not mentioned in the discourse.

This study contributes to psycholinguistic evidence that focus-marking is a common mechanism cross-linguistically to heighten activation of contrastive alternatives. This evidence has important implications for the mechanisms supporting resolution of implicature and referent tracking. Cross-linguistic differences lie in the types and relative importance of different focus markers in different languages. To our knowledge, this is the first time focus effects on activation of alternatives has been shown for a language that primarily uses syntactic focus marking and is one of a very small number of psycholinguistic studies involving Austronesian languages.

Table 1: Example story from the experiment

Context	
Sa fa'atau e le mālō ma lona to'alua meaai: 'o le pai, 'o le falaoa ma le keke.	
'The visitor and her husband bought some food: a pie, bread and cake.	
Continuation	
Sa u'u e le tamāloa le falaoa ma le pai.	
'The husband carried the bread and the pie.'	
Critical Sentence	
Focused	*'O le keke sa 'ai e le mālō.*
	'It was the cake that the visitor ate.'
Unfocused	*'O le mālō sa 'aia le keke.*
	'It was the visitor who ate the cake.
Probe Words	
Object	*le keke*
	'the cake'
Mentioned	*le falaoa*
	'the bread'
Unmentioned	*le ēsi*
	'the papaya'
Unrelated	*le kolisi*
	'the college'

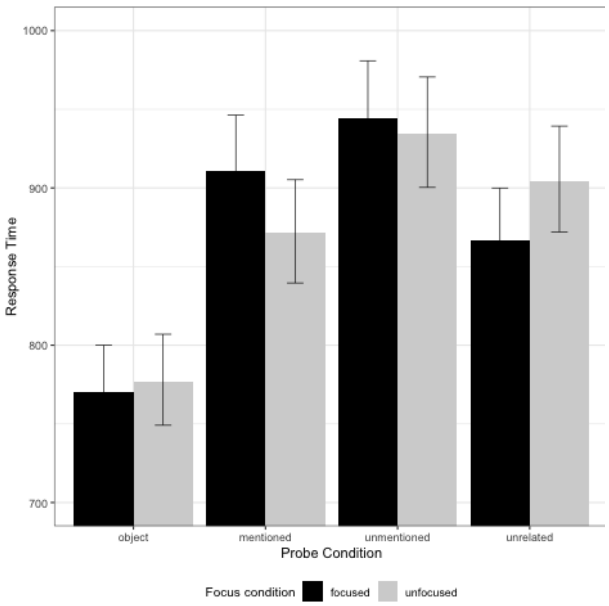

Figure 1: Back-transformed fitted RTs in milliseconds by Focus and Probe condition. Error bars show standard error of the means.

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