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**Competition effect in phonological priming:  
The number of mismatching phonemes between primes and targets**

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Three experiments were carried out to examine competition effects in phonological priming. Primes and targets shared the first phonemes and subjects performed a shadowing task. In Experiment 1, we replicated the experiment of Hamburger and Slowiaczek (1996), but with French words and French listeners. Primes and targets shared zero (/muan/-/brik/), two (/brez/-/brik/) or three (/briz-brik/) phonemes. As described by Hamburger and Slowiaczek, an inhibitory priming effect was observed only when the primes and the targets shared three phonemes. No effect occurred with an overlap of two phonemes. Hamburger and Slowiaczek suggested that these observations seem to indicate that competition effects are dependent on the size of phonological overlap. However, the words used both in Experiment 1 and by Hamburger and Slowiaczek all had four phonemes. This implies that in the case of an overlap of three phonemes, the primes mismatched the targets only on the last phoneme. In contrast, in the case of an overlap of two phonemes, the primes mismatched the targets on the last two phonemes. It is thus likely that the competition effects do not depend on the number of shared initial phonemes, but rather depend on the proportion of mismatching phonemes. Experiments 2 and 3 were designed to test this prediction. In Experiment 2, primes and targets shared the first two phonemes but the primes mismatched the targets only on the last phoneme (/buʃ/ - /bul/). It was found that the primes inhibit the recognition of the targets, despite the small overlap between the primes and the targets. In Experiment 3, we again used an overlap of three phonemes, to test whether such an overlap is sufficient to cause an inhibitory effect when the primes mismatched the targets on the two last phonemes (/baʒet/ - /baʒaʒ/). Primes and targets differing only on the last phoneme (/baʒaʁ/ - /baʒaʒ/) were also used. An inhibitory effect was again observed when the primes mismatched the targets on the last phoneme. More interestingly, no effect emerged with an overlap of three phonemes when the primes and the targets had the two last phonemes mismatched. Taken together, the results suggest that the strongest competitors of a target word are those that mismatch its lexical representation by one single phoneme. These data will be discussed in reference to models like Shortlist that include both lateral and bottom-up inhibition.

Hamburger, M.B., and Slowiaczek, L.M. (1996) Phonological priming reflects lexical competition. *Psychonomic Bulletin and Review* 3, 520-525.