

The role of gender information in spoken-word recognition in a non-native language

Garance Paris
Andrea Weber
University of Saarland, Germany

Numerous eyetracking studies (e.g. Tanenhaus et al., 1995) have confirmed phonological competitor activation in spoken-word recognition: While identifying a target object, participants fixate objects with names overlapping in onset with the target more than unrelated objects. Furthermore, Dahan et al. (2000) demonstrated that preceding gender information can constrain lexical access: When competitors mismatch the gender-marking on a preceding article, early competitor activation is eliminated (e.g. after hearing "le_[masculine] bou...", *bouton*_[masculine] is activated, but not *bouteille*_[feminine]).

But what role does gender play in non-native spoken-word recognition? It has been shown that competitors from the mother-tongue interfere with spoken-word recognition in a non-native language (e.g. Weber & Cutler, 2004). Similarly, native gender information might also interfere with non-native processing.

In two experiments, we asked proficient second-language learners to mouseclick on pictures in displays which contained a target and a competitor overlapping in onset in French and German, plus two unrelated distractors. The target always shared gender in both languages, and was preceded by its gender-marked article in the instructions. There were two conditions, defined by the competitor's gender: In the "same-gender" pairs (1), target and competitor shared gender in both languages. Thus, neither French nor German gender constrained the initial set of lexical candidates. In the "different-gender" pairs (2), target and competitor differed in gender in French, but not in German, so that French gender excluded the competitor, but German gender did not.

Example items:

		Target	Competitor
(1) same gender pair	French	<i>perle</i> _[fem]	<i>perruque</i> _[fem]
	German	<i>Perle</i> _[fem] 'pearl'	<i>Perücke</i> _[fem] 'wig'
(2) different gender pair	French	<i>cassette</i> _[fem]	<i>canon</i> _[masculine]
	German	<i>Kassette</i> _[fem] 'tape'	<i>Kanone</i> _[fem] 'canon'

Carrier sentences:

French: *Cliquez sur le_[masculine]/la_[feminine]...*
(*'Click on the...'*)

German: *Wo befindet sich der_[masculine]/die_[feminine]/das_[neuter]...?*
(*'Where is the...?'*)

In Experiment 1, Germanophone listeners heard French instructions. They fixated competitors more than unrelated objects in both conditions: In the "different-gender" trials, they could not use non-native gender to eliminate competitor activation. Presented with the same materials, a French control group showed competition for same-gender but not for different-gender trials, thereby replicating Dahan et al. (2000).

In Experiment 2, the same materials were presented in German to Francophone learners. Here, gender differed in the different-gender pairs only in the underlying French translations. French listeners showed competition only in the same-gender trials, suggesting that in the different-gender trials, native French gender inappropriately eliminated early competitor activation while listening to German.

This finding allows us to contribute to the ongoing debate (see Dahan et al., 2000) about the origin of the gender effect: Given that it is very unlikely that distributional regularities from a language not spoken during the experiment will influence processing, our results rather support the notion that the gender effect originates on the grammatical level of processing, instead of being due to a superficial co-occurrence of the forms of articles and nouns.

References

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