Teaching L2 French learners grammatical gender through statistical cues

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Introduction

French nouns can be either masculine or feminine. This gender feature appears in the form of agreement on nouns, pronouns, determiners, adjectives and, in some cases, past participle verb forms. Although grammatical gender errors rarely prevent communication entirely, proper usage of gender is an important and frequently occurring requirement for any French speaker. Unfortunately, in the second-language classroom it is commonly explained that the gender of the majority of French nouns is arbitrary and must simply be memorized on a case-by-case basis by the L2 learner. In fact, there are a variety of **phonological, semantic and morphological cues** available to predict the gender of the vast majority of nouns.

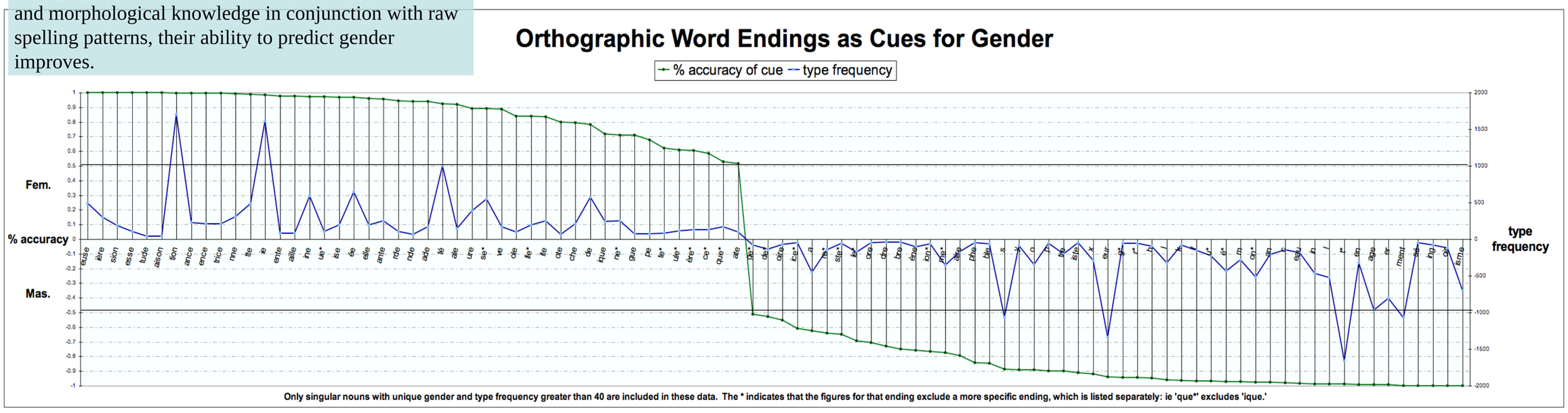
Tucker, Lambert and Rigault (1977) examined a large corpus of French nouns and identified many significant phonological patterns in the distribution of gender. They showed that native speakers' choice of gender for rare nouns and invented nouns is consistent with the patterns of distribution in the language. In accordance with MacWhinney's Competition Model, which asserts that "cue acquisition and cue strength depend on four basic properties of cues: delectability, task frequency, availability and reliability," the native speakers were most inaccurate on cues with frequently occurring counterexamples, low frequency cues and vowel initial words, which often appear in the uninformative definite context; e.g.. 'l'axis' (m) and 'l'autoroute' (f).

Returning to the case of L2 learners, Carroll (1999) found that when she controlled the frequency and reliability of different types of gender cues, adult learners demonstrated greater sensitivity to the semantic cue of natural gender and no sensitivity to phonological word endings. Contrasting this, francophone children use phonological cues well before semantic cues. Clearly, the L2 learner does not start from the same place as the L1 speaker.

Purpose

The goal of this project is to use a computer tutorial to **organize and present** to the L2 learner, the cues used naturally by native speakers in deciding the gender of unfamiliar words. A pilot study done by Tucker, Lambert and Rigault (1977) suggests that this kind of direct training can significantly improve the L2 learners' performance on gender.

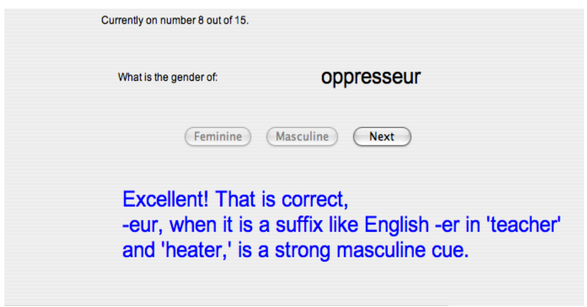
The least sophisticated cues for gender are orthographic. As learners develop and apply semantic and morphological knowledge in conjunction with raw spelling patterns, their ability to predict gender improves.

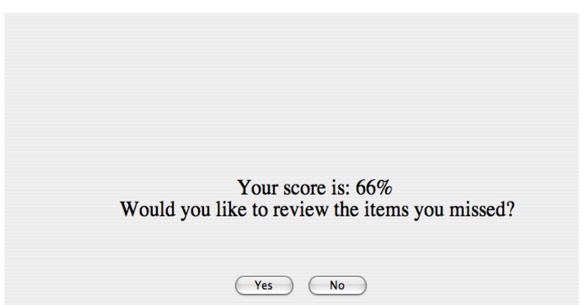


Method

I downloaded a detailed French lexicon, including 52,000 nouns from www.lexique.org. I then sorted these words into a corpus of 29,600 singular and single-gender nouns that I used to find and evaluate cues. As seen in the graph above, many spelling cues are highly reliable cues. To further improve accuracy of prediction and learnability, I divided and extended cues into more detailed groups.

- **Morphological** - highly accurate and discernable derivational suffix cues (such as -isme (m) in *bilinguisme* and -eur (f) in *froideur).*
- **Semantic** -animate referent agreement (as in *le banquier* and *la banquière*) and semantic trends such as the fact that chemicals tend to be masculine.
- **Phonological/Orthographic** - the remaining cues such as that the [o] sound, whether it is spelled -o (*embargo*), -eau (*chapeau*), -ot (*escargot*), etc. is a strong indicator of masculine gender.
  - knowledge of borrowings to French such as that all -ing words taken from English adopt the masculine gender.





I used this information to make a general teaching order and to provide feedback in a computer tutorial that I created.

Some features of the tutorial, as seen on the left, are:

- Ordered lessons consisting of randomized samples of words drawn from a larger corpus of words with pre-specified cues.
- Cumulative exercises which support the teaching order.
- Immediate feedback on errors
- The opportunity to redo the missed words in a set until they are all corrected.

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Future Developments

Carroll (1999) suggested that adult L2 learners show no sensitivity to patterns in phonological word endings. Additionally, the results of Schiller (2004) relating to different positions of overlapping prime-target segments showed that naming latencies were shorter when the prime and target words shared *initial* orthographic and phonological segments, as opposed to overlapping final segments.

If we naturally focus on word beginnings, is it the case that Carroll's findings indicate a need for explicit redirection of the learner's attention to word endings, rather than an inability of L2 learners to pick up on phonological cues?

Will learners benefit more from structured teaching and detailed feedback identifying cues and exceptions or simply from access to a large amount of instant feedback on the correctness of their choice of grammatical gender?

Will morphological (recall that some suffixes are not very transparent) or phonological cues come more naturally and be more effective for L2 learners?

In order to answer these questions, I will be continuing this project this coming year with an experiment on adult L2 French learners at McGill University and the effectiveness of different teaching approaches. I plan to use a Cepstral Text-To-Speech voice to better incorporate phonological cues.

Acknowledgments

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References

Carroll, Susanne E. (1999). Input and SLA: Adults' Sensitivity to Different Sorts of Cues to French Gender. *Language Learning* 49:1, pp. 37-92.

Goosse, André (Ed.). (1993). *Le Bon Usage*. Paris: Duculot.

MacWhinney, B.J., Leinbach, J., Taraban, R., & MacDonald, J.L. (1989). Language learning: Cues or rules? *Journal of Memory and Language*, 28, 255-277.

Schiller, Niels O. (2004). The onset effect in word naming *Journal of Memory and Language* 50, 477-490.

Tucker, G., Lambert, W., & Rigault, A. (1977). *The French speaker's skill with grammatical gender: An example of rule-governed behavior*. The Hague, Paris: Mouton.