# Selection of Materials for the sentences experiment:

All the predictable sentences were selected from the Sentences form Peelle et al. (2020).

<https://link.springer.com/article/10.3758/s13428-020-01351-1>

The selection steps for the predictable sentences:

* + 1. We selected sentences with Highest\_Response\_Percent > 90% (it Is important to mention that Response\_Entropy and Highest\_Response\_Percent were strongly correlated).
    2. Each sentence was automatically translated to French using DeepL software.
    3. The translations were modified, excluded other sentences (too difficult to translate correctly, written formulation).

Excluded sentences:

1. Sentences which did not make much sense in French (lack of easy translation, links with American culture, etc.)
2. Sentences for which the translation would result in differing target word or in the target word not being at the end of the sentence.
3. Further excluded sentences that did not seem sufficiently predictive for our task.
4. For sentences having the same target word, only kept the one with the Highest\_Response\_Percent.

Based on the list of predictable sentences, we created for each sentence a sentence with unpredictable (but not surprising) end:

The selection steps for the predictable sentences:

* + - 1. For each predictable sentence, we invented a new sentence which have the same grammatical structure, that ends with the same target word. It was important to us to make sure that the target word is not predictable, but it is also not surprising – we wanted to avoid surprise reaction that might affect the EEG and eye tracking response.
      2. Another matching criterion was the number of CS gestures: we verified that each predictable and it’s unpredictable sentence will have about the same number of CS gestures.
      3. Chart, scatter chart

         Description automatically generatedTo check if the sentences that were chosen are serving their purpose, we ran an online exam using google form interface. The task was to complete the sentences presented with the first word that comes to mind. We verified that the predictable sentences are mostly been completed with the target word, while the unpredictable sentences are completed with a variety of different words and not majorly with the target word. The subjects of this online experiment were French native speakers ages: 18-65, from: France, Belgium, Morocco. Sentences that did not stand in our thresholds for predictable/unpredictable sentences were excluded ([a sentence was considered predictable if the probabailty of the target word was above > 0.6 and unpredictable if it was under < 0.15. final results:

# Selection of Materials for the lexical decision experiment:

The tested words were chosen from the Megalex database. We used only 3-signs CS words, crossing phonological number of syllables (1/2/3) and frequency (high/low).

To do so, we set frequency thresholds: we calculated the log of sum of the books and films frequency according to megalex. The low frequency words are words that this combination of frequencies is under 0.5, and the high frequency words are words that this combination of frequencies is above 1.

The words were divided in to three groups:

* + - * 1. 0 mismatch = 3-signs CS words, 3 phonemes words
        2. 1 mismatch = 3-signs CS words, 2 phonemes words
        3. 2 mismatch = 3-signs CS words, 1 phoneme words

|  |  |  |  |
| --- | --- | --- | --- |
| Number of mismatches  Frequency | 0  'CVCVCV' | 1  'CVCVC', 'CVCCV' | 2  'CCVC','CVCC', 'CCCV' |
| High | 40 words  8 pseudo-words | 40 words  8 pseudo-words | 40 words  8 pseudo-words |
| Low | 40 words  8 pseudo-words | 40 words  8 pseudo-words | 40 words  8 pseudo-words |

To make sure that the words don’t have another form that can be included in another category, we used only nouns. 60 words were selected randomly so all the words in each category will have the same mean, median and std (+- 0.1). Then, they were   
screened manually to selected 40 final words in each group (to exclude inappropriate, etc.). We made sure that there are no confounding factors regarding frequencies between the groups.

Pseudowords generation:

To generate the pseudo-words, 10 words were selected randomly from each of the six categories (10 words from the 0 mismatch/high frequency, 10 words from the 0 mismatch/low frequency, etc.). Based on each word, a pseudoword was manually modified.