

# The language-based endo/exo effect: a preliminary analysis

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## Background

Oral movements are related to functions of the digestive apparatus and speech. Ingestion and expectoration are the oldest functions of the oral muscle system (Hejnal & Martindale, 2008). The outward movements associated with expectoration and the inward movements associated with ingestion can be placed in a sagittal plane going from the lips to the rear of the mouth. This sagittal plane, nonetheless, also serves as the pathway for consonantal strictures: precise points of articulation used for language phonation. Thus, it is possible to generate words which exhibit such inward/outward nature, such as COTEBA (outward) and BOTECA (inward), which might in turn elicit affective responses associated with ingestion/expectoration functions.

## The endo/exo effect

Topolinski et al. (2014b) showed that participants preferred inward (endomotor) over outward words when presented with nonsense inward/outward words. This effect also occurred when participants were presented with negatively associated words. Even more astonishingly, when participants performed silent readings of the words, the effect occurred as well. However, for objects associated with disgust and rejection, such as toxins and dangerous chemicals, the effect vanishes. Topolinski, et al. (2015) conducted a series of experiments which proved this effect. Some experiments show that oral affordance modulates the preference for inwardness over outwardness: mouthwash and lemonade are *to-be-ingested* whereas pills and bubblegums are *to-be-expectorated*. A situationally-induced instance of the effect was studied, too: bubblegum can present both effects. For example, the effect was absent after blowing the gum but it was present after chewing it. This effect might be seen as a novel instrument for brand name generation in spite of its limitations. The diverse phonation of letters across languages could produce strong effects in one language but not in others. Also, as the effect vanishes (or even reverses) when the object is negatively associated, this method would only work for positive or neutral attitude objects.

## Some experimental results

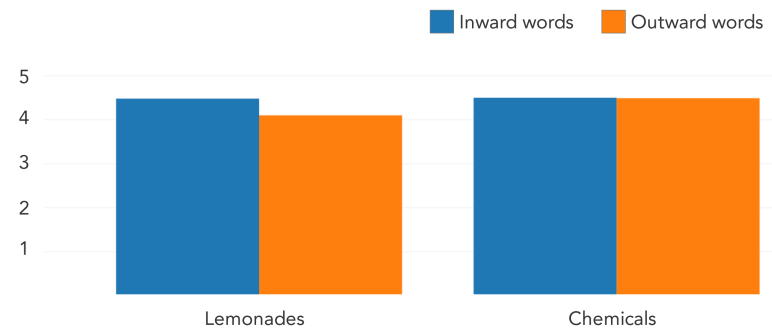


Figure 1. Topolinski, et al. (2015) experiment 2

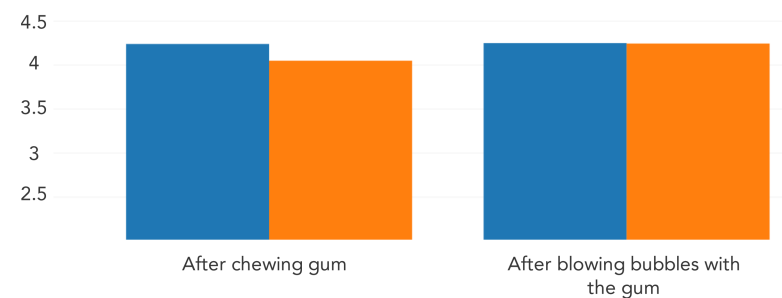


Figure 1. Topolinski, et al. (2015) experiment 6

## Current efforts

A script has been written to encode different phonation repertoires and decide whether a certain input word exhibits inward or outward directionality. After selecting a set of archetypal words associated with positive, neutral and negative attitude objects, the script will be tested and further phonation repertoires will be included. The goal of this effort is to construe a tool to analyze the world's largest fish database ([www.fishbase.org](http://www.fishbase.org)) and label exemplars as *to-be-ingested* or *to-be-expectorated*. This may help us understand if a certain exemplar is edible or not, even if reports of its suitability for use as food are lacking or nonexistent.

## Main reference

Topolinski, et al. (2015) "Matching between oral inward-outward movements of object names and oral movements associated with denoted objects"