

# Impossible is not possible – On the pragmatic scope of lexical and sentential negation

Daniela Casartelli

Université de Genève

The expression of negation has puzzled great minds from ancient Greece well until today. Aristotle formalized the study of linguistic expression of negation and proposed the logical square of opposition to study the relationship of opposed linguistic entities. More recently, Horn has given a profound analysis of the history of negation taking into account Aristotle's fundamental work.

But what about the linguistic expressions of necessity and possibility, summarized into the category of epistemic modality? What is there to say about negation and epistemic modality, other than the different scope of negation it has over lexical expressions of modality.

The present work seeks to explore what type of negation is most likely to be used to express maximal contrast i.e. contradiction. Linguistic negation can either be expressed lexically or sententially. Lexical negation, or narrow scope negation, is realized morphologically attached to the base of the negated POS. Sentential negation, or wide scope negation, is realized syntactically with a negative marker.

*lexical negation*                      It is impossible to run faster than a rabbit  $\equiv \neg \exists x[P(x)]$

*sentential negation*                      It is not possible to run faster than a rabbit  $\equiv \exists x\neg P(x)$

The base for the present work is the collected data from a quantitative experiment in English, German, and French, where native speakers have been put to the task of a single choice online survey. The task was set up to detect a tendency towards expressing negation for epistemic modals with either lexical, or sentential negation in the three languages. Over all theme of the present work is to investigate whether speakers prefer a linguistically strong or weak negation to express maximal negation i.e. contradictory negation for expressions of epistemic modality (i.e. necessity and possibility). From a pragmatic point of view, linguistically strong negation negates the entire proposition, whereas weak negation only negates the modal.