Dynamic of a speech: tracking the discursive strategy

Mónica Bécue-Bertaut*
Universitat Politècnica de Catalunya monica.becue@upc.edu

We present a statistical methodology for tracking the discursive strategy in a persuasive speech, such as a forensic closing speech. First, homogeneous parts are automatically uncovered in this non-structured corpus taking advantage of the distribution of the words; then, the temporal trajectory of these blocks and their hierarchical nesting are spotted; finally, the flow of arguments, through the flow of words, is tracked along. Different multidimensional methods are combined. The starting point is to divide the speech into arbitrary short sequences, count the occurrences of each word in each sequence and encode the speech into a sequences × words table. A specific algorithm, called chronological clustering, allows for grouping these sequences under the constraints of being both contiguous and lexically homogeneous; to ensure the latter, a test is performed to authorize or not the fusion between nodes. As a result, the breakpoints are detected and the speech is segmented into long enough homogeneous blocks. The shape of the text is uncovered and visualized through correspondence analysis applied to the blocks×words table. A time-constrained clustering allows for revealing the hierarchical structure of the arrangement of the blocks. The nodes are labeled with their lexical characteristics; the flow of arguments is pointed out along the labeled hierarchy. This methodology is illustrated by its application to a forensic closing speech delivered by a prosecutor at Barcelona Criminal Court. The first part of the speech is thus identified as well organized while the second evidences a more difficult progression of the argumentation. This corresponds to, first, an exposition of indisputable facts followed by a circumstantial evidence based reasoning, difficult to implement in this kind of speech elaborated when in progress from only previous outline and notes. This approach would also be useful as a tool to analyze any kind of written or oral persuasive texts.

Key Words: textual analysis, correspondence analysis, constrained clustering, labeled hierarchy