Usage of associative thesauri for solving tasks related to the "tip of the tongue" phenomenon

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The task of selection the most appropriate word in a particular context is one of the main problems concerning the formation of verbal statements in both writing articles, texts and generating speech expression. One could imagine rather frequent situation when any particular word can't be retrieved from the memory, instead, other semantically similar words, concepts come out or only the first letter of the word is retrieved. This problem was first described by R. Braun and D. McNeill [1] and called "tip of the tongue" phenomenon. There are at least three alternative explanations for it, but the most adequate was proposed by R. Braun, D. McNeill and A. Luria [2]. They consider the processes of recalling and naming the words as processes of probabilistic choice of a word from involuntary associations' chain and relate them to the construction of human semantic memory.

In current presentation I would like to present a system which uses associative thesauri and dictionaries of synonyms as "helper" in selection, recalling the right word. Currently the system is developed for Russian language only and it includes:

- Data from Russian Associative Thesaurus (RAT) obtained as result of two independent associative experiments (in 90s and 2000s) held by a group led by Karaulov Y.N. [3][4]. Most of the data are set of triples *<cue, reaction, frequency of associative pair>*. These triples were used to construct a probabilistic model of associative network [4];
- Data from dictionaries of Russian language synonyms;
- Clustering algorithm to find semantically similar verbal values (words).

The system proceeds as follows: a user enters a set of words (cues) which are semantically related to the desired; the system searches for the closest cluster and returns a list of words in it.

In the nearest future I plan to extend the system by adding English language. As a result, the system will also be helpful for people learning English or dealing with translations.

References

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