

Interactive computer generation of jokes for language skill development

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In order to develop their communication skills, children need to be able to experiment with language. One way to achieve this is through the use of humour, particularly wordplay such as puns. However, children with language difficulties have limited opportunities for such language play. One of the primary objectives of our project STANDUP (System To Augment Non-speakers Dialogue Using Puns) is to compensate for this by providing software tools which allow language-impaired children to experiment with language through joke-generation.

The starting point for our system is JAPE (Binsted 1996), a program which automatically generates punning riddles: humorous texts in a question and answer form, where the humour arises from some form of linguistic similarity within the text; for example: "What do you call a murderer with fibre? A cereal killer." JAPE demonstrated the feasibility of automatic generation of simple jokes. It worked by applying its (often time-consuming) mechanisms to churn out jokes. There was very little, if any, scope for a user to modify the behaviour of the system so as to create a particular type of pun. The JAPE project did not address issues such as usability, efficiency, and interaction, aspects which are central to our research. We are interested in customizability and interactivity. Customizability is a property of a system which enables its user to modify the jokes being generated, whereas interactivity is the property of a system which enables the user to easily do so during the joke generation process.

We have made two small-scale initial studies. Low(2003) concentrates on enhancing the interactivity of JAPE and building a graphical user interface (GUI) which allows the user easier access. Amongst the possible interactions his system allows are: creating jokes (with various ways of involving the user), riddle-solving (where the user is presented with the question part of a joke and is asked to provide the answer), a joke library (where users can store their favourite generated jokes for future recall), and a topic database (modifiable by the user). The user is also provided with several support features, such as finding out the meanings of words in the lexicon, and searching for synonyms, homophones, rhyming words and spoonerisms for user-specified words.

Trujillo-Dennis (2003) concentrates on developing a user interface that caters specifically for the type of users targetted by the STANDUP project: children with speech impairments, and possibly severe motor disabilities, but no cognitive disabilities. Her system was developed as a front-end user interface for Low's interactive joke generation back-end. She explored several aspects of the user interface, such as a simple and cognitively undemanding visual layout, adaptable colour schemes, simple language, speech output, and a single switch scanning interface suitable for users with severe motor impairments.

The evaluations of these two systems are contributing to the initial design for the main STANDUP system, which will be a full-scale interactive joke generation system with facilities for customization and a user interface especially suited to language-impaired children.

References:

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