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A Text-to-Speech system with Interjections

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We describe in this thesis about the implementation of a Text-to-Speech (TTS) system that attracts an attention of the listener by inserting interjections to sentences and propose an effective usage of interjections on TTS in general.

Speech synthesis technology is recently becoming popular as everyone can use it, and the research on the quality of synthesized voice is in progress, too. Quality of synthesized voice is evaluated in view points of understandability, naturality and profitability. The evaluation of understandability is studied objectively, but most evaluation methods on other two view points remain to be subjective.

There are on the other hand many researches studying the evaluation of naturality of speech based on phonology. Besides researches based on phonology, there is a research of the necessity of interjections in public speeches and a research of insertion into a dialogue system, where interjections are compared with beeps in terms of effectivity. They employ Wizard of OZ (WOZ) method to record PCM voice and public speeches.

We implemented a TTS system with a speech synthesis system(ProTalker97 by IBM). We show that our system is not monotonic in intonation and attracts attention of the listener owing to interjections.

We experiment with TTS on three states; no interjection, some interjections and space replacements for interjections. We had our subjects listen artificial voice and asked them to write down words so that they do not hear desultory. We took care of using unknown sentences for them. We used in fact headlines of news from asahi.com(Asahi Shimbun) at 12:30 on each day. We counted written words and interviewed subjects in each case.

We learnt that some people were attracted to hear sentences distinctively by interjections because we observed that more words were written compared to the cases where no interjection or some pause was inserted. Some people have on the other hand negative impressions towards interjections. They wrote less word in case of some interjections

state than no interjection state and replacement state. They also said “Intonation of interjections which the system speaks does not sound natural.”

They also thought that the interjections sounded as if they were a break point of sentences. They wrote in fact some sentences after interjections as if they were a new sentence. We think that it would be more effective if we use interjections only at the start of sentences.