

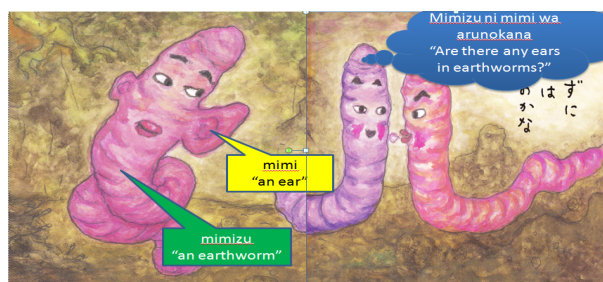
## *Can Japanese preschoolers recognize embedded words?*

During the past thirty years or so, researchers have attempted to find a plausible mechanism which enables us to understand how and why human listeners can so successfully extract the most suitable words from continuous speech. Several influential hypotheses have been proposed to explain it (See McClelland and Elman, 1986; Luce, 1986; Norris, 1994. See also Cutler, 2012). There are two suppositions for these hypotheses. One is embedding (i.e., words are embedded within other words). The other is a simultaneous activation followed by a competition process (i.e., any types of words are activated simultaneously and compete each other and a final candidate is determined).

These suppositions have recently prompted some researchers to investigate the distributional patterns of embedded words in various languages (English, Dutch, and Japanese) (See Cutler et al., 2012). One important consequence is that those words in the western languages are skewed towards the word initial position, but are in equilibrium in Japanese, suggesting that Japanese counterparts may be more accessible regardless of a word position along with the mora-based speech segmentation (See Otake et al., 1993; Cutler and Otake, 2002). This finding is particularly useful for word play in Japanese because Japanese improvise pun called *dajare* is highly associated with embedded words (See Otake and Cutler, 2013).

The present study reports the on-going project which is based upon the consequences described above. That is, can embedded words be available for Japanese preschoolers? If yes, it may give us a new insight to understand how and when the nature of moraic organization is developed prior to the acquisition of orthography in Japanese (See Inagaki et al., 2000). The present study will report on the preliminary rather than the conclusive experimental findings. We will demonstrate that Japanese preschoolers may be in a situation where they are well conditioned to anticipate the existence of embedded words because of the following facts: (1) Japanese picture books for preschoolers contain a full of embedded words (See figure 1). (2) Japanese TV commercials directed to children emphasize the existence of embedded words using ample repetition of embedded words (See figure 2). We will argue that Japanese preschoolers may exploit the same strategy to process spoken words as Japanese adults do (See Otake et al., 1993; Cutler and Otake, 2002) and that they can enjoy *dajare* as well.

**Figure 1:** The following example clearly demonstrates that *mimi* ‘an ear’ is an embedded word in *mimizu* ‘an earthworm’. Both (*mimi* and *mimizu*) are monomorphemic words.



Adopted from *Arunokana* by Oda and Sano (1999), Suzuki Shuppan: Tokyo.

**Figure 2 :** This is a TV commercial produced by NTT Docomo in 2015. The following lyrics are shown on the TV screen in time with the song. As can be seen, *doko* ‘where’ is repeated many times in the lyrics which is an embedded word in Docomo ‘a name of company’. This commercial is wisely designed because having Docomo’s smart phone may help their parents locate their kids.

Doko doko dokocchi doko ikoo

Doko doko doko doko dokomademo

Acchi kocchi sokocchi ima dokocchi

Wagakko uocchi

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