



Mis-segmentation – ‘Wreck a nice beach’ or ‘recognise speech’?



Paul Warren

WATCH YOUR LANGUAGE

FRANCES SUTTON asks how listeners discern word boundaries in speech – where one word ends and another begins.

This issue of “word segmentation” is an important aspect of how we recognise speech – listeners need to identify word boundaries in order to recognise words and get hold of the mentally stored information associated with these words.

Readers of this column, being literate, are used to seeing spaces between words, but spoken language has few convenient gaps telling us that one word has finished and the next is beginning.

Because we hear speech as a sequence of words, the gaps we think we hear are often imposed by our language system as a consequence of recognising individual words.

Of course, to recognise words in the speech stream we need to know those words in the first place, which is why it is difficult to break up the stream of speech when you don’t know the language particularly well, either as an adult learner of a second language or as a young first-language learner.

As a child, a German friend thought there was a single word “Gottseidank”, which she later realised was the expression “Gott sei dank”, meaning “thank goodness” (literally “to God be thanks”).

Fortunately, adults generally help children break speech into words by using the slower, more deliberate and repetitive form of speech known as child-directed speech.

In adult-directed speech, the boundaries between words often get blurred. This is sometimes reflected in what people write – a recent set of meeting minutes noted that someone had “sent the amended proposals onto the appropriate people” rather than “on to”.

Nevertheless, there are some clues to

word boundaries in speech. Most obviously, if a word is at the end of a sentence then the end of the word may be marked by a pause.

This is often where you might expect to see punctuation in written text. Note though that a pause is not a reliable cue to a word boundary, since hesitation pauses can happen within words.

Some word-boundary clues result from the ways in which different sounds are distributed. For example, in English the “h” sound in “hot” is only found at the beginnings of syllables, and the “ng” sound in “sing” only at the ends of syllables. So a “h” sound cannot be the end of a word, but has to be either at the beginning of a word or at the beginning of a syllable within a word (“head”, “ahead”).

A “ng” sound cannot be the beginning of an English word (contrast Maori, where we find initial “ng” sounds, as in “ngaio”).

Other sounds have different variants in different syllable positions – for many speakers the “l” at the beginning of a syllable is different from that at the end of a syllable, and in some cases this will also correspond to the beginning and end of a word, as in “leaf” and “feel”.

The stress patterns of English words provide a further clue – there is a tendency in English for content words (nouns, verbs, adjectives, adverbs) to have a stressed first syllable. This is either the primary (strongest) stress in the word (as in “breakfast”) or a secondary level of stress (as in “polystyrene”).

It has been claimed that a good strategy for finding the beginning of a word in English is to listen out for stressed syllables. This strategy does not always produce the right result.

Some “slips of the ear” or misperceptions involve a mis-segmentation of the

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speech stream based on patterns of stress, such as inserting a word boundary before the stressed syllable when mishearing “disguise” as “the skies”.

A trick I play to illustrate mis-segmentation to my students during our discussion of these issues is to say “wreck a nice beach”. In the context, they invariably report me as having said “recognise speech”.

Frances also raises the question of whether the methods for breaking continu-

ous speech into words differ across languages.

Not all languages use stress the way English does, so the answer to that question is yes, they do differ.

But that will have to be the subject of another column.

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