

Morphological Opacity

In English, many word forms are created by adding a suffix to a root form, e.g., EXCITE-EXCITEMENT, ABLE-ABLY, DECIDE-DECISION. If children are given the first form and asked to produce the second, they find some quite easy and others quite hard. In the morphology literature the easy ones are called “transparent” and the difficulty ones “opaque.” The more opaque items tend to give readers difficulties into high school and, for some readers, even into adulthood. The number of such morphological forms is quite large, so understanding how readers acquire these forms is critical to good reading skills in public education as well as in adult literacy programs for poor readers.

We believe the dichotomy between transparent and opaque forms is, in fact, a continuum. Points on the continuum are defined by the number of morphological rules needed to transform the root form into the morphologically complex form. For example, EXCITE-EXCITEMENT is at the transparent end of the continuum; it requires only the addition of the suffix to the root. By contrast, DECIDE-DECISION is at the opaque end of the continuum. It requires changing the pronunciation of the second D in DECIDE, changing the /ai/ vowel in DECIDE to /I/, deleting the glide in the /ai/, and regrouping the syllables.

The number of rules varies with the suffix. The goal of this project is to identify the morphological rules, and hence the complexity, for the more commonly used suffixes and especially the ones giving public school readers the most difficulty.

We will validate the complexity scale on data from two dissertations now underway. Both measure the ease of processing of many different morphological forms. We can test how well our opacity scale predicts the difficulty children have in processing the forms. If the scale is validated, we can develop intervention strategies for showing readers the steps for changing the root form into the morphologically complex form.

The project will require three graduate students working two semesters each to search the literature for the most common and the most difficult morphological forms. They will then identify the rules necessary for converting the root form into the morphologically complex form and assign an opacity score to the morphologically complex form. Finally, they will use regression analysis to test whether the opacity scale predicts difficulty of processing for young readers.

This project will provide significant research training for three graduate students working in a cross-disciplinary projects. If successful, the project can leverage research grants from agencies focusing on improving the teaching of reading and the reducing of illiteracy,