CQ Exemplar dynamics: Word frequency, lenition and contrast

Lention is also known as weakening. It includes converting vowels to schwa, deletion, voicing, spirantization.

1. How do the words every, memory, and mammary differ in their pronunciation? What factor is related to these differences?

2. How are the pronunciations of the final stop in told and meant different? Why?

3. In generative theory, why should there be no differences in lenition rates between different words?

4. If you added a statement to a generative rule to the effect that the rule only applies X percent of the time, why would that still not account for things like the every, memory, mammary differences?

5. In exemplar theory, a category such as the vowel [i] is composed of . . .

6. According to exemplar theory, if there are three tokens of [i], two of which are very similar to each other, while the third is much less similar to either of the others, how are these three tokens represented in the cloud of tokens of [i]?

7. How is the cloud of a frequent word different from that of an infrequent word?

8. It is impossible to remember every word every heard or said. To account for this exemplar theory assumes what two things?

9. When a new instance is experienced, what factors determine which category it will be assigned to? (2 things)

10. The strength of an exemplar depends on what?

11. If you heard the word moo* where the * masks the final sound, there are two reasons why you would probably assume it was moon and not moot? What are they?

12. How do prototype and exemplar models differ?

13. Assume these exemplar clouds of the vowels [i] and [e]:

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i   i   e   e   e
I i i i i e   e
i i i e e e e e
i i i e e e e
i i i i i e e e

I
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The boldface underlied exemplars are the most central, and should be considered the most representative example. However, some studies show that people actually chose the capitalized vowels as the best examples of the vowels. Why?

14 If you hear the vowel in the above graphic represented by “E” what does it mean that “Activation of exemplars in the neighborhood is passed upwards to the labels”?

15 Using the above graph. If the speaker chooses to produce [i], how does exemplar theory assume which exemplar to use as a model pronunciation.

16 What does “noise in the motor control and execution” in a single speaker’s pronunciation of the same thing refer to?

This computer model starts with one exemplar of a new category located at 1 in Figure 2. The computer throws out other exemplars, and when one is determined (by a similarity measure) to be similar to the exemplars in the category it is added to the cloud. Similarity is represented as deviations from 1 on the horizontal axis, and the vertical axis represents how frequent (or how many exemplars) fall at a particular point on the horizontal axis. The model also eliminates exemplars that have been in the cloud for a while (memory decay).

17 As more and more exemplars are added the horizontal axis expands. What does this mean?

18 As more and more exemplars are added, the vertical axis goes down. What does this represent?

Figure 3 results from a model in which a slight amount of lenition is allowed to happen. For example, the [g] in sugar could be closed for 15 milliseconds at first, then with lenition it remains closed for smaller and smaller amounts of time until it is now a fricative [ɣ]. From there is opens into an approximant, and then is so open that you would have to assume it is deleted.

19 In Figure 3, the exemplar cloud shifts to the left. What does this show?

20 For generativists, sound change involves rule addition, reordering, etc. This would produce an abrupt change of x > y. How is this exemplar model more realistic?

21 Assume that each of the histograms in Figure 3 represent the second syllable in the words mammary, every, and memory. Which word goes with which histogram (dotted, thin, thick line)? Why?

22 In your own words, what four things does the model demonstrate/predict?

23 Which of these four things can a rule-based model predict?

24 Think about the exemplars of a word for an old and young speaker. When a new pronunciation for that word starts to be used, explain in terms of exemplar theory why younger speakers are more likely to move their pronunciation toward the new one compared to the old speakers?

25 In the model that gives Figures 2 and 3, what does it predict will happen to the boundaries of the category over long stretches of time?

26 Another thing observed about human beings is that practice makes (almost) perfect. If we get better
over time, but are never perfect, what would be expect the curve to do over time?

27 How do they get the model to show entrenchment?

Don't worry about the discussion of the Hintzman model.

28 In figure 5, two categories are shown to merge. Why is it that the dotted line category merges with the solid line category and not vice-versa?