## Chapter 6

## Conclusion

There is nearly universal agreement that intervocalic lenition is driven, at least in part, by phonetic factors. However, there is less agreement on what exactly the relevant factors are. A widely accepted view is that lenited forms require less effort to produce than unlenited forms, but researchers do not agree on what makes one form more difficult than another, or on the degree to which a given measure of difficulty is actually relevant to lenition. In this dissertation, I have argued that the articulatory understanding of lenition must be revised in two substantial ways.

First, Experiment 1 failed to find evidence that lenited forms are easier to produce than unlenited forms. This experiment involved a novel approach to investigating articulatory effort: I attempted to observe effort reduction in action by comparing the speech of intoxicated subjects (hypothesized to use less articulatory effort) with that of sober subjects. Although the speech of the two groups did differ, it was not the case that intoxicated subjects were more likely to produce lenited forms; rather, intoxicated subjects exhibited an overall contraction of the articulatory space. Thus, the relationship between lenition and articulatory effort

reduction appears to be more complicated than commonly assumed.

Second, perceptual facts – long overlooked in the study of the phonetic basis of lenition – can help us understand in some cases why lenition is unidirectional. The change  $/D/ \rightarrow [Z]$  intervocalically is more difficult to perceive than the change  $/D/ \rightarrow [T]$ , while the changes  $/T/ \rightarrow [S]$  and  $/T/ \rightarrow [D]$  are about equally perceptible. Combined with a framework such as the P-map that posits that more salient changes to underlying forms are less likely than less salient changes, these facts provide us with an explanation for the fact that lenition of voiceless stops may involve changes to either voicing or continuancy, while lenition of voiced stops may change continuancy but not voicing.

These two results suggest that we can no longer do 'phonology as usual' when analyzing lenition. Chapter 5 illustrated what a phonological analysis would have to look like in order to be consistent with the results of Experiments 1-4. The analysis presented there shows that it is possible to describe lenition patterns in the context of Optimality Theory even without a constraint that favors lenited forms over unlenited forms outright.

I conclude that phonetic factors are relevant to intervocalic lenition, but not in the way they are usually thought to be. More broadly, this work illustrates the value of broadening the range of phonetic sources we are willing to consider for a given phonological phenomenon, and of applying a variety of experimental paradigms to difficult empirical problems.