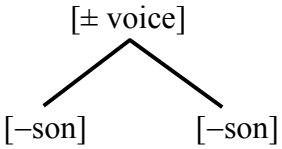
Phonology: Voicing Assimilation

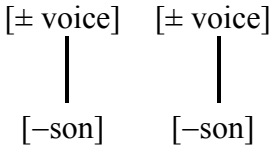
In many languages, including English, two adjacent obstruents cannot disagree in voicing. The feature [± voice] has to spread over both of them.

example	[ɛgzæmpl̩]	[… gz …]
exception	[ɛksɛpšn̩]	[… ks …]
structure	[strʌkčr̩]	[… kč …]
etc.		

So the phonological structure has to look like this:



and not like this:

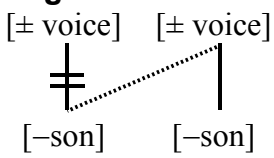


What happens if two morphemes get put together?

trans /trAnz/ + fer /fr/ → [trænsfr̩]
wide /wIːd/ + th /θ/ → [wɪtθ]

The second one changes the voicing of the first one. This is called regressive voicing assimilation. We can write the rule as follows, where the double cross-off shows that a connection is cut, and the dotted line shows that a new connection is formed.

Regressive Voicing Assimilation



When the adjacent obstruents are in separate words, they don't usually have to agree in voicing. But when one of those words is a single phoneme, they do. One single-phoneme word is the "contracted" form of *is*: *'s*. Notice what happens:

the book /ðəbʊk/ 's /z/ → [ðəbʊks]

Here, the assimilation is in the other direction. So English also has a rule of progressive voicing assimilation, which applies across word boundaries.

Progressive Voicing Assimilation