English /aɪ/-raising: new insights into an old problem

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Many dialects of English, including those spoken in Canada (Chambers 1973), exhibit a phonological process that raises the diphthong /aɪ/ to [əi] before voiceless obstruents. This phenomenon has played a prominent role in major theoretical debates since the middle of the twentieth century, when Joos (1942) drew the attention of structuralist phonologists to the interaction between /aɪ/-raising and /t/-flapping in Ontario: notably, Joos's claims provided Halle (1962) with an influential argument in favour of extrinsically ordered rules. Today, however, we have access to a vastly enlarged and improved body of empirical data on /aɪ/-raising, thanks in no small measure to the fact that the process continues to emerge in new dialects (e.g. Fruehwald 2013, Berkson et al. 2017).

Recent research has yielded two striking empirical discoveries about English /aɪ/-raising. First, Moreton (2016) has observed instances of overapplication of raising in stem-level derivatives in a dialect spoken in Mississippi. In this variety, as in Ontario, /aɪ/ withstands raising when the following voiceless obstruent belongs to a metrically stronger syllable: thus, the diphthong remains unraised before the tonic syllable in *hỳpótenuse*, but raises before an unstressed syllable in *hýpocàust*. In line with this metrically conditioned pattern, some stem-level derivatives exhibit normal nonapplication of raising in pretonic position: e.g. *cìt-átion* and *tìtán-ic* have unraised monophthongized [ɑː] despite the raised /aɪ/ of *cite* and *títan*. Yet, unexpectedly, Moreton's Mississippi informants exhibit overapplication of raising in many word-pairs such as *type~tỳp-ólogy* and *Hittíte~Hittìt-ólogy*, where both the base and its stem-level derivative show raised /aɪ/. Even more recently, Davis et al. (2019) have identified a prosodically restricted form of /aɪ/-raising in Forth Wayne, Indiana, where raising is a recent and ongoing innovation. In contrast with the canonical Ontario pattern described by Chambers, many Forth Wayne speakers produce raised diphthongs in monosyllables like *lice*, *write*, and *bike*, but not in trochaic disyllables like *bison* /ˈbaɪsn̩/ and *Níke* /ˈnaɪki/.

In this talk I show that these recent discoveries corroborate a Stratal OT analysis of English /aɪ/-raising (Bermúdez-Otero 2003) in which the process starts its diachronic life-cycle as a phonetic enhancement of prefortis clipping (Gussenhoven 2007) and, in its mature form, comes to apply at the stem level. In particular, taken in conjunction with the existence of outright lexical exceptions such *tíger,* which shows raised /aɪ/ before voiced /ɡ/, the previously unnoticed instances of cyclic overapplication reported by Moreton provide striking confirmation for Chung's Generalization (Bermúdez-Otero 2012), one of the key theorems of Stratal OT.

As a pendant to this argument, I will also suggest that, when combined with a probabilistic approach to input representations (Pater et al. 2012), Stratal OT opens up the possibility of explaining the acquisition of free rides in an entirely nonstipulative way, clarifying how learners of English generalize the opaque unfaithful mapping /aɪt/→[əiɾ] from alternating items like *writ-er* /ɹaɪtəɹ/→[ɹəiɾəɹ] (cf. transparent *write* /ɹaɪt/→[ɹəit]) to nonalternating items like *mitre* /maɪtər/→[məiɾər].

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