Andrew Nevins (2010):
Locality in Vowel Harmony.
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This monograph presents an original principles-and-parameters theory of vowel harmony in the spirit of Chomsky's Minimalist Program. The author argues that the computational principles that govern vowel harmony are not restricted to phonology: rather, they are characteristic of the human language faculty as a whole. The main idea is that vowel harmony processes are the result of a Search-and-Copy procedure that is formally identical to verbal agreement (the *Agree* operation of minimalist syntax), with the obvious difference that syntax defines locality in terms of hierarchical structure (c-command) whereas phonological structure defines it in terms of linear precedence. The relevant operation, *Harmonize*, is informally stated as follows: "A recipient needs a value for a feature F. Search is always initiated *from* the target/recipient of assimilation. Once the target encounters a donor, it copies the value of a feature F" (p. 26). This preliminary formulation is then successively formalized, extended, and developed throughout the book, until it finally emerges as an algorithm that has been implemented by the author in Python and is available, along with some case studies, in an accompanying web site at http://mitpress.mit.edu/vowel_harmony. The author expresses his hope that interested readers will verify the predictions made by the principles and parameters of the locality of vowel harmony proposed in the book by actively experimenting with this software.

The book is extremely broad in its empirical coverage, at least as far as the number of languages/vowel harmony systems considered in it is concerned. If I counted correctly, no less than 68 different languages are discussed or at least briefly characterized. No wonder that a number of inaccuracies slipped in with respect to individual languages or individual data. In what follows, I will mention some of these inaccuracies, especially ones concerning Hungarian (a language that is not thoroughly described in the book but is cited in sufficient detail so that inaccuracies have an occasion to occur). Furthermore, the text is packed with typos and other kinds of small errors, in addition to inaccurate or downright wrong examples. I will

list some of these at the end of this review; but first, a chapter-by-chapter overview is provided.

The first chapter (*What is vowel harmony, how does it vary, and why study it?*, pp. 1–22) begins as if this was an introductory textbook for absolute beginners. "It's common when typing an e-mail that our fingers hit the wrong key, and a savvy spell-checker underlines the misspelled word in red." The text goes on in this vein, introducing possible vs. impossible consonant clusters, going on to possible vs. impossible vowel sequences in vowel harmony languages. Then the author cites a bewildering pair of examples from Turkish with a sequence of thirteen back-voweled suffixes appended to the word *Avrupa* 'Europe' and their front-voweled counterparts appended to the word *Akdeniz* 'Mediterranean'; and he even goes as far as introducing (not taking for granted) "difficult" technical terms like *segment* along the way. Turning to the computation of locality, the text includes an extended description of the Boston and Cambridge subway system in which the question "What's the closest Boston stop?" (asked at Harvard Square) turns out to be ambiguous, if taken too literally. It is then explained with the help of several maps that the correct answer is "Charles Street" (three stops but 2.9 miles), not "BU Central" (twelve stops but 1.7 miles "as the crow flies"). This is a highly enjoyable discussion; it is a pity that the example exhibits a much closer fit with locality in *syntax*: it can be extended to phonology but it loses much of its initial appeal in that case. The rest of the first chapter explains how vowel harmony is distinct from coarticulation, points out that locality is not measured by pure distance in syntax either, presents an overview of the major claims of the book, and concludes by motivating the need for a new model of vowel harmony. Existing models are broadly classified into two types: declarative identity-enforcement and sharing-by-spreading. It is argued that neither type is sufficient to model the locality of vowel harmony: models of the former type are too permissive (in that they undesirably allow patterns that do not exist), whereas models of the latter type are too restrictive (in that they undesirably disallow patterns that do exist).

The second chapter (*The search principle*, pp. 23–68) introduces the core mechanism of vowel harmony: the Search procedure, by which a search is conducted from a point of origin to find the closest element that satisfies a certain need (setting the value of harmony). It is demonstrated that locality is best modeled in terms of measuring from the dependent element (the recipient of a feature value) rather than in terms of measuring from the donor. The application of the procedure is illustrated from Turkish, Woleaian, and Barra Gaelic.

The third chapter (*Contrastiveness, markedness, and feature-based locality*, pp. 69–119) introduces an important source of crosslinguistic variation: it defines parametric values of *relevant* in "the closest relevant element". Different settings of this parameter may yield dramatically different surface behavior, as demonstrated in the contrast between certain Yoruba dialects. Locality may be relativized to certain types of properties like the contrastive or marked status of features in the segments that bear them. The exclusion of irrelevant segments subsumes the locality effects

traditionally called “transparency”. Such parametric variation is illustrated by Finnish, various Turkic and Tungusic languages, and by dialectal variation within Kirghiz, Yoruba, and Finnish.

The fourth chapter (*Defective intervention: when search comes back empty-handed*, pp. 121–147) explores what happens when the search fails because an intervening segment stands between the value-seeking recipient and its donor within the search domain. This involves the locality effects called “blocking” or “opaqueness” in the literature. Since the Search procedure cannot look ahead, as soon as it encounters a defective element in the domain, it ends in failure, even if there is a potentially eligible value source “further downstream”. The effects of failed copying are illustrated from Nawuri, Kisa, Khalkha Mongolian, and Jingulu.

The fifth chapter (*Domain limitations on search*, pp. 149–190) introduces yet another source of parametric variation: how far a search can go before it gives up. This chapter illustrates parametric variation in the extent of the search domain in Hungarian and Gikuyu. Then it turns to exploring how high-sonority elements may also close off a search domain, acting as “hurdles”, and establishes an implicational generalization about sonority, based on Wolof, Classical Manchu, Hungarian, and Finnish low vowels.

Finally, the implications of the principle of locality and its consequences with respect to the parallels between phonology and syntax within the human language faculty are discussed in the sixth chapter (*Minimalist computation of vowel harmony: implications*, pp. 191–208). Notes, references, an index of terms, and an index of languages close the volume.

Turning to Hungarian, on p. 159 it is pointed out that in this language the dative suffix *-nak/-nek* copies its backness value from the closest leftward vowel bearing contrastive [±back], i.e., it skips noncontrastive [–back] vowels. A set of seven examples is given at this point, of which *kavics-nak* ‘pebble-dat’, *radír-nak* ‘eraser-dat’, and *tányér-nak* ‘plate-dat’ are fine; however, the other four, *nüansz-nak* ‘nuance-dat’, *biká-nak* ‘bull-dat’, *bohém-nak* ‘bohemian-dat’, and *művész-nak* ‘artist-dat’ are problematic, in three different ways. The first two are not at all cases in which the last stem vowels are [–back]; traditionally, these vowels are not even noncontrastive (it is argued later, on p. 183, that the low vowels of Hungarian should be analyzed as noncontrastive for backness, but at this point, nothing of the sort is mentioned). The issue of contrastivity notwithstanding, nothing is skipped in *nüansz-nak* or *biká-nak*; the suffix copies backness from the last stem vowel, even on Nevins’ (later) analysis. *Bohém* is a strongly vacillating item, with both *bohém-nak* and *bohém-nek* attested, roughly with equal frequency; this is nowhere accounted for in the book (similarly for other vacillating items containing *é*, rather than *e*). Finally, **művész-nak* is simply nonexistent; even if the *é* is skipped, the next closest stem vowel, *ű*, is one of the most firmly front-harmonic vowels in this language. The correct form, of course, is *művész-nek*.

Where the last back-harmonic vowel of the stem in Hungarian is followed by two or more noncontrastive [–back] vowels, there is both inter-speaker and intra-speaker

vacillation with respect to the backness value of the suffix (cf. Hayes et al. 2009). This is duly represented and accounted for by Nevins.[1] However, there is also variation from one item to the next as to the extent of vacillation; this is completely ignored here. It is pretended (p. 161) that *analízis-nak* 'analysis-dat', *alibi-nak* 'alibi-dat', *bronchitis-nak* 'bronchitis-nak' and even *november-nak* 'November-dat' are just as good (well-attested) as *analízis-nek*, *alibi-nek*, *bronchitis-nek*, and *november-nek*, respectively. Again, this is completely wrong. **November-nak* is simply impossible (a quick Google search turns up 5.100 occurrences of *november-nek* against zero occurrence of *november-nak*); **bronchitis-nak* is almost so (275 *-nek* vs. 1 *-nak*). The other two examples are indeed vacillators, but the distributions are rather skewed here, too: *analízis:* 8.660 *-nek* vs. 48 *-nak; alibi:* 10.300 *-nek* vs. 205 *-nak*.[2]

The present reviewer is not in a position to check data from the other 67 languages with a similar thoroughness; but here are a few other problems, chosen almost at random:

On p. 13, it is claimed that the Kanembu completive (e.g. 'I took') is [+ATR] and the incompletive (e.g. 'I am taking') is [–ATR], citing Akinlabi (1996). The examples given, however, suggest that it is the other way round. I tried to check Akinlabi (1996) and was surprised to find that this source did not mention either the Kanembu language or the feature ATR at all. Akinlabi (1994), on the other hand, says that Kanembu completive forms involve [–ATR] vowels and incompletive ones involve the corresponding [+ATR] vowels; so the actual examples cited by Nevins may even be correct.

On p. 58, with respect to Barra Gaelic, it is claimed that [æ] and [a] are surface-identical (83b), whereas [e] and [e] (sic!) are "identical for all features *except* back" (83h). On p. 61, we read "In Woleaian theme-vowel harmony, only when both

[1] In fact, two different stories are given to account for the front-harmonic version of vacillating items, at least one of which is probably superfluous. On p. 82, we read "The fact that one instance of the vowel /i/ does not provide a [–back] value for harmony, but two instances seem to do so, suggests that we cannot simply state that /i/ has no value for [–back] throughout the language [probably the author means [±back] here], because if this were the case we should expect no difference between one and two instances of 'nothingness'." By contrast, on pp. 159–160, we are given the story that "search halts after traversing two syllables. Failure to find a contrastive value of [±back] once two syllables have been traversed results in default insertion of [–back]." It is unclear why Nevins insists that /i/ should be specified as [–back], albeit noncontrastively so, if the front-voweled suffix is claimed to be due to default value assignment, not to the [–back] feature value of the two stem /i/'s.

[2] There are also some minor misrepresentations of Hungarian data: on p. 181, we read *pasztörizal* for *pasztörizál* 'pasteurize', on p. 182, *kanalizal* for *kanalizál* 'canalize'; on p. 183, *József* 'Joseph' is transcribed with the mid vowel [e] rather than the low vowel [ɛ], even though the former does not even occur in Standard Hungarian (and the difference is crucial in Nevins' analysis); and on pp. 183–4, *Ágnes* 'Agnes' is misrepresented as *Agnes*, several times. Note that all these examples are in IPA transcription, where the differences involve entirely different symbols, not just omitted accents as in the orthographic versions shown here for simplicity.

flanking vowels are high will harmony occur" – some twenty pages earlier we were told that harmony occurs when both flanking vowels are *nonlow*.

On p. 199, we read that the alternation of the Latin adjectival suffix *-alis/-aris* is due to dissimilation that "is asymmetrically dependent on the value of [±lateral] for the closest leftward [+consonant, +sonorant, –nasal] element in the stem: when /l/ is the closest, the suffix is [-aris], and when /r/ is the closest, the suffix is [-alis]." This account is true as far as examples like *milit-aris* vs. *mort-alis* are concerned. Also, cases like *flor-alis, plur-alis* seem to show that it is indeed the closest liquid that counts. However, in cases like *nav-alis, ven-alis, caud-alis, hiem-alis* 'winter', *autumn-alis,* there is no stem liquid on which dissimilation could be based, showing that the underlying/default value is [+lateral]. This already diminishes the appeal of an account involving dissimilation from both values. To make things worse, intervening noncoronal consonants also systematically block the dissimilation as in *legalis* 'legal', *fluvialis* 'belonging to river', *pluvialis* 'rainy', *glacialis* 'icy', *umbilicalis* 'umbilical', *intellectualis* 'sensible', *Vulcanalis* 'related to Vulcanus', *cloacalis* 'related to canal', *flavialis* 'related to Flavius', *glebalis* 'consisting of clods', *localis* 'local', etc., unless the /l/ in the stem is too close to the suffix (less than three morae apart) as in *palmaris* 'related to palms', *vulgaris* 'vulgar' (Cser 2010).

Turning to typos and other minor errors, it is quite often the case that pluses and minuses are confused. For instance, on p. 40, Woleaian /ö/ and /ü/ are claimed to be [+back, –round] (should be [–back, +round]); on p. 42, /e/ and /i/ of the same language are represented as [+round] (should be [–round]); on p. 81, we read about Finnish, "A rule-ordering solution, in which /i/ lacks [–back], then harmony happens, then /i/ becomes [+back], then assibilation happens, would be a possible account" – clearly, what is meant is "then /i/ becomes [–back]"; on p. 101, Shor /o/ is represented as [–back] (should be [+back]); on p. 107, we read "In Barasano, all [±sonorant] segments are contrastive for [±nasal]" – where all [+sonorant] segments are meant; on p. 113, Finnish is claimed to lack [+high, +back, +round] vowels (should be [–round]); and on p. 178, the Wolof vowel inventory is tabulated as having two sets of [–back, –round] vowels where one set is front unrounded and the other set turns out to be *back* unrounded. Furthermore, arrows are sometimes missing, sometimes superfluous, and sometimes just misplaced (although they are an important part of the formalism developed); the names Büring and Yang are misspelt as *Buring* (p. 225) and *yang* (p. 219, note 10), respectively; on p. 149, [i] is mistranscribed as [a], and on p. 130, the section number 4.4.3 is written '4.43'. Finally, here are a few textual errors: "just taking [-lar]/[-ler] away and subtracting it to get the result" (p. 29; *away* should be removed); "cyclic processes apply in a single pass through the word, without regard to morphological constituency" (p. 64; correctly: *postcyclic* processes); "Of these two processes, neutral. Transparent vowels undergo coarticulation only" (p. 76); "Analyses […] have no clear no way of presenting a unified theory" (p. 200); "subjects could learn vowel harmony […] and disharmony […] equally as well" (p. 200, should be *equally well*).

All in all, while I cannot but agree with Elan Dresher quoted on the back cover as saying “Written in a lucid and accessible style, this absorbing book should be of interest to anyone who is curious about how language works”, perhaps we can quietly add, “and it should have been of interest to a well-trained and devoted copy-editor, too.”

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