Summary. Myopic phonological patterns are legion. But non-myopic patterns — both tonal (Hyman 2011, Jardine 2016) and non-tonal (McCollum & Essegbey 2018, McCollum et al. 2020, Leduc & McCollum 2023) — also exist, albeit comparatively rarely. In this talk we summarize the empirical evidence for several non-myopic vowel harmony patterns and address two metatheoretical questions that arise from their status. The first question concerns the continued though falsified insistence that all feature spreading is myopic (Wilson 2003, 2006, Mascaró 2019). The second question concerns how and why non-myopic patterns appear to be far less amply attested than myopic ones.

Myopic spreading. Wilson (2006) claims that "[a]ll attested unbounded spreading processes obey [the] myopia ('no look ahead') generalization" in (1), paraphrased slightly from the original.

(1) **Myopia.** Spreading from *T* to *U* is independent of whether spreading can proceed into *Z* in any string ...*TXUZ*... (rightward spreading) or any string ...*ZUXT*... (leftward spreading).

The prototypically myopic character of unbounded spreading is perhaps most straightforwardly exemplified by the behavior of vowel harmony in forms with opaque vowels. In Maasai, for example (see Meinhardt et al. 2024 and references there), the [−ATR] low vowel /ɑ/ is opaque to the leftward spread of [+ATR] from dominant vowels. Even when spreading is blocked, all vowels between a dominant vowel and an opaque vowel undergo harmony, as shown by the extent of underlining in (2a).[1]

(2) **Maasai.** a. /ɪ-ɑs-ɪʃɔ-re/ ⟶ [ɪ-ɑs-iʃo-re] 2SG-do-INTR-APPL b. *[ɪ-ɑs-ɪʃɔ-re]

Referring back to the myopia generalization in (1): the dominant applied suffix /re/ is *T*, the vowels of the recessive intransitive suffix /ɪʃɔ/ are (*X* and) *U*, and the opaque vowel of the verb root /ɑs/ is *Z*. Spreading from *T* to *U* is successful despite the fact that continued spreading into *Z* is not. The ungrammatical form in (2b) illustrates what the result would be if vowel harmony were not myopic in this way, failing to spread from *T* to *U* because continued spreading into *Z* is bound to fail. The hypothetical state of affairs illustrated by (2b) is referred to as *'sour grapes' spreading* (Wilson 2006).

Non-myopic spreading. While we know of no simple and plain examples of 'sour grapes' spreading like the one in (2b), cases of non-myopic vowel harmony are nevertheless attested. We focus here on one case, Liko (Wit 2015, McCollum et al. 2020), leaving others for the full talk. [ATR] harmony in Liko is typically root-controlled, targeting all suffixes rightward and the root-adjacent prefix leftward. (Note that the [+ATR] counterpart of the [−ATR] low unrounded vowel [ɑ] is mid rounded [o].)

(3) **Liko.**
a. [tɑ-dʊnd-ɑ] 1PL-touch-FV
b. [to-gbusj-o] 1PL-curse-FV
c. [tɑ-mʊ-dʊnd-ɑ] 1PL-2PL.O-touch-FV
d. [tɑ-mu-gbusj-o] 1PL-2PL.O-curse-FV

Certain enclitics are invariably [−ATR], resisting [+ATR] spreading from the root. When the preceding suffix vowels are high, they undergo spreading in myopic fashion (4a vs. 4b). When they are low, on the other hand, the resistant enclitic prevents spreading to them in 'sour grapes' fashion (4c, d).

(4)
a. [nɑ-ka-pɪk-ɪ=gʊ] 1SG-NEG-sway-FV=NEG
b. [nɑ-ko-ɓin-i=gʊ] 1SG-NEG-dance-FV=NEG
c. [nɑ-ko-ɓin-ɑ=gʊ] ...-FV.PST=NEG
d. [nɑ-ko-ɓin-ɑg-ɑ=gʊ] ...-PL-FV.PST=NEG

The relevant aspects of the Liko pattern can be summarized as in (5).

[1] All tones are omitted from transcribed data cited in this abstract.

(5) a. **Rightward spreading to high vowels is myopic.** High suffix vowels undergo [+ATR] spreading, *even when* there is a resistant [−ATR] enclitic present further to the right.

b. **Rightward spreading to low vowels is non-myopic.** Low suffix vowels undergo [+ATR] spreading, *except when* there is a resistant [−ATR] enclitic present further to the right.

Regardless of the details of a given phonological analysis of the overall Liko pattern, it cannot be denied that spreading from the root (*T*) to low vowel suffixes (*U*) depends on whether it can proceed into following enclitics (*Z*) — that is, that rightward spreading to low vowels is non-myopic (5b).

How could non-myopia not exist? Non-myopic spreading patterns are a subset of the set of patterns that Jardine (2016) calls 'unbounded circumambient', in which the output of a given input element *U* may depend on (a) information on *both sides* (= 'circumambient') of that element and for which (b) there is in principle *no bound* (= 'unbounded') on how far this information may be from *U*. Such is the case in the Liko [ATR] harmony pattern: the output of a suffix vowel /ɑ/ depends on whether a [+ATR] root vowel is to its left and whether a resistant [−ATR] enclitic is to its right. (The unboundedness of the distance to each of these pieces of information must as usual be inferred from the available data.)

Meinhardt et al. (2024) show that any unbounded circumambient pattern can be decomposed into three basic elements: (i) an unbounded rightward process, (ii) an unbounded leftward process, and (iii) an interaction between them. An analytical sketch of the Liko pattern in these terms is given in (6).

(6) i. **Rightward spreading.** Spread [+ATR] rightward from roots to all suffix vowels.

ii. **Leftward spreading.** Spread [−ATR] leftward from resistant enclitics to suffix low vowels.

iii. **Interaction.** Rightward spreading applies first, then leftward spreading.

Unbounded directional spreading processes like (6i) and (6ii) are undoubtedly a part of phonological theory, and must independently be able to co-occur in the same language even with different morphological and/or phonological restrictions on each. Ordered interaction as in (6iii) must also be a part of phonological theory, whether as a relation between individual processes (e.g. serial rule ordering) or as a function of the grammatical architecture (e.g. stratal organization). While parochial theoretical proposals ensuring myopia (e.g. Wilson 2003, 2006, McCarthy 2011) and a computational expressiveness class excluding unbounded circumambient patterns (the 'weakly deterministic' class; Heinz & Lai 2013, Jardine 2016, Meinhardt et al. 2024) have been advanced, maintaining the claim that all spreading is myopic effectively amounts to the claim that there can be no interaction between contradirectional unbounded spreading processes. This arbitrarily limits the combinatorial freedom of (i–iii).

Why is non-myopia rare? We are left with the question why non-myopic patterns appear to be considerably more rare than myopic patterns. We appeal again here to the three basic analytical elements in (i–iii): for a language to exhibit a non-myopic pattern, it must have two interacting contradirectional spreading processes, ordered in the right way, the odds of which are plainly lower than having just one unidirectional process, or two that do not interact, or two that interact but are ordered in a different way.

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