Metathesis is late and fake

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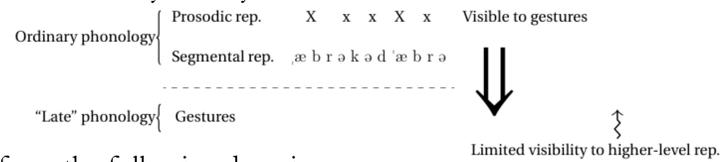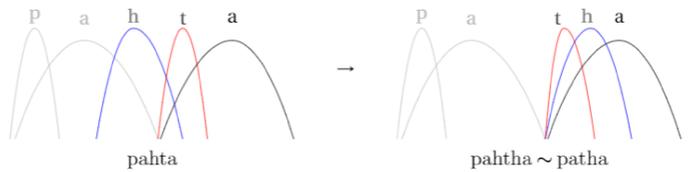*maddie.gilbert@nyu.edu, mooney@nyu.edu*

I. Main Claim

- **Main claim**: Productive phonological metathesis is gestural overlap (Grammont 1933; Blevins & Garrett 1998; Hall 2003; Mooney 2021), not transposition
- **Secondary claim**: Metathesis operates on temporal representations that are *late* in the phonology
- By *late*, we mean that there is an asymmetry in what information is available to different levels of representation

- We present evidence from the following domains:
    1. Phonetic: synchronic metathesis produces intermediate and coarticulated forms
    2. Phonological interactions: phonology acts like metathesis has not occurred

Languages: Sevillian Spanish (Romance) and Uab Meto (Austronesian)

II. Case Study 1: Sevillian Spanish

- Productive CC metathesis in /sp st sk/ clusters (Torreira 2012; Ruch 2013; Ruch & Peters 2016)
    - [s] debuccalizes to [h] and metathesizes
        (1)   /pasta/   [pahta] → [patʰa]   'pasta'
- Phonetics
    - Experimental work suggests that speakers treat [Ch] sequences as underlying /sC/ clusters (Gilbert 2021), not as aspirated stops (cf. O'Neill 2009; Gylfadottir 2015)
    - Metathesis can be understood as overlap of the [h] and stop gestures (following Parrell 2012)
    (2)

        pahta   pahtha ~ patha

    - Phonetically intermediate forms suggest that metathesis occurs via gestural overlap: [ht], [th], [hth]
- Phonological interactions
    - Metathesis operates on surface temporal representations, independent of other phonology
    - We use the fact that Spanish is weight-sensitive to test interaction between metathesis and stress
    - **Weight Restriction for Antepenultimate Stress**: *LĹHL, ✓LĹLL (Harris 1983)
    - If [Ch] sequences are underlying /sC/ clusters, surface syllable structure changes with metathesis
        (3) /ˈplas.ti.ko/   HĹLL   [ˈpla.thi.ko]   ĹLL
    - Question: Does surface change in syllable structure affect stress?
    - Results from a nonce word judgment task (Gilbert, ms)

(4)

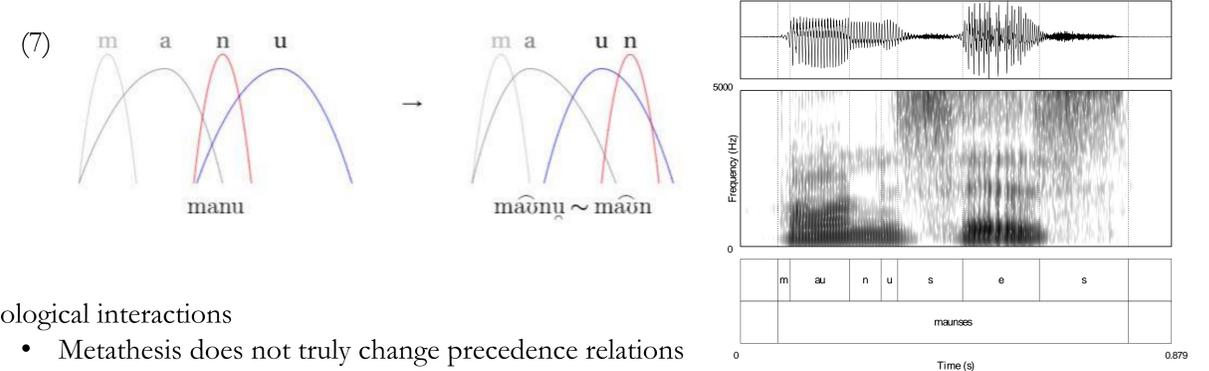| a. /lumafato/ /LLLL/		b. /lumafasto/ /LLHL/		c. /lumafanto/ /LLHL/		d. /lumafasto/ /LLHL/
[luˈmafato] [LLĹL]	>	[luˈmafatho] [LLĹL]		[luˈmafanto] [LĹHL]	=	[luˈmafatho] [LLĹL]

- If stress were evaluated based on the metathesized (=surface) form, we'd expect:
    - (4a.) and (4b.) to be treated equally, because they are both LLLL on the surface
    - (4d.) to be better than (4c.) because (4d.) is LLLL on the surface
- UR weight—not surface—weight matters for stress assignment
- This means that metathesis is not visible to stress assignment
- The gestural representations are not visible to the prosodic representations, so metathesis is *late*

III. Case Study 2: Uab Meto

- Uab Meto (Austronesian, West Timor) has productive CV metathesis
    - Metathesis is prosodically conditioned (Mooney 2021), similar to CV metathesis in other Austronesian languages (e.g. Rotuman, Churchward 1940; Kwara'ae, Heinz 2005; Leti, Hume 1998)
- Uab Meto truncates roots to reduce right-edge lapses, as in (5)
    (5) a. /ˈkibaʔ/   → [ˈkibaʔ]   'ant'   σ́σ → σ́σ   No truncation
        b. /ˈkibaʔ-e/   → [ˈkibʔ-es]   'an ant'   σ́σσ → σ́σ   Truncation
- In some contexts, as in (6), truncation can also feed metathesis
    (6) a. /ˈmanus/   → [ˈmanus]   'betel vine'   σ́σ → σ́σ   No truncation
        b. /ˈmanus-es/   → [ˈmau͡ns-es]   'a betel vine' σ́σσ → σ́σ   Truncation + Met.
- Phonetics
    - Meto metathesis can be understood as overlap of C and V gestures
    - Like in Sevillian Spanish, this overlap can produce *intermediate forms*

(7)

        manu   mau͡nu ~ mau͡n

- Phonological interactions
    - Metathesis does not truly change precedence relations
    - Metathesis can repair a number of markedness violations, but it cannot resolve vowel hiatus
        (8) Vowel hiatus resolved via epenthesis
            a. /ˈfatu-e/   → [ˈfau͡tg-e].   'the stone'   *[fau͡t-e]
            b. /ˈkero-es/   → [ˈkeor͡g-es]   'a monkey'   *[ˈkeor-es]
            c. /ˈtasi-e/   → [ˈtaɪ͡sg-e]   'the sea'   *[ˈtaɪ͡s-e]
    - If metathesis were transposition, metathesis alone should be enough in (8), e.g. *[fau͡t-e]
    - Metathesis-as-overlap cannot resolve hiatus, because the vowel remains partially in-situ
    - Additional perk: analyzing metathesis as overlap removes overgeneration issues associated with LIN

Interim summary:
- Productive, synchronic metathesis in Spanish and Uab Meto share several key characteristics:
    (a) Metathesis is realized as gestural overlap, and produces intermediate forms around 10% of the time
    (b) Metathesis doesn't seem to change how the phonology proper views segmental order
    (c) Metathesis is not morpheme-driven, but entirely predictable based on surface phonology

V. Discussion & Conclusions

- Metathesis in Sevillian Spanish and Uab Meto is overlap, not transposition
    - This supports arguments against transposition in phonology proper (Takahashi 2019)
    - In both cases, this overlap occurs independent of other phonology (e.g. stress assignment)
- What does this mean for the phonetics-phonology interface?
    - Metathesis manipulates gestural representations, not atomic segments
    - Gestural representations are *not* visible to higher-level phonological structure, but the higher-level phonology *is* visible to gestures
    - We call this asymmetry *lateness*