Renaissance Counterpoint in Theory and Practice: A Case Study

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Social Sciences and Humanities Research Council of Canada
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Research Question

How well do theoretical treatises accurately reflect musical practice in the Renaissance?

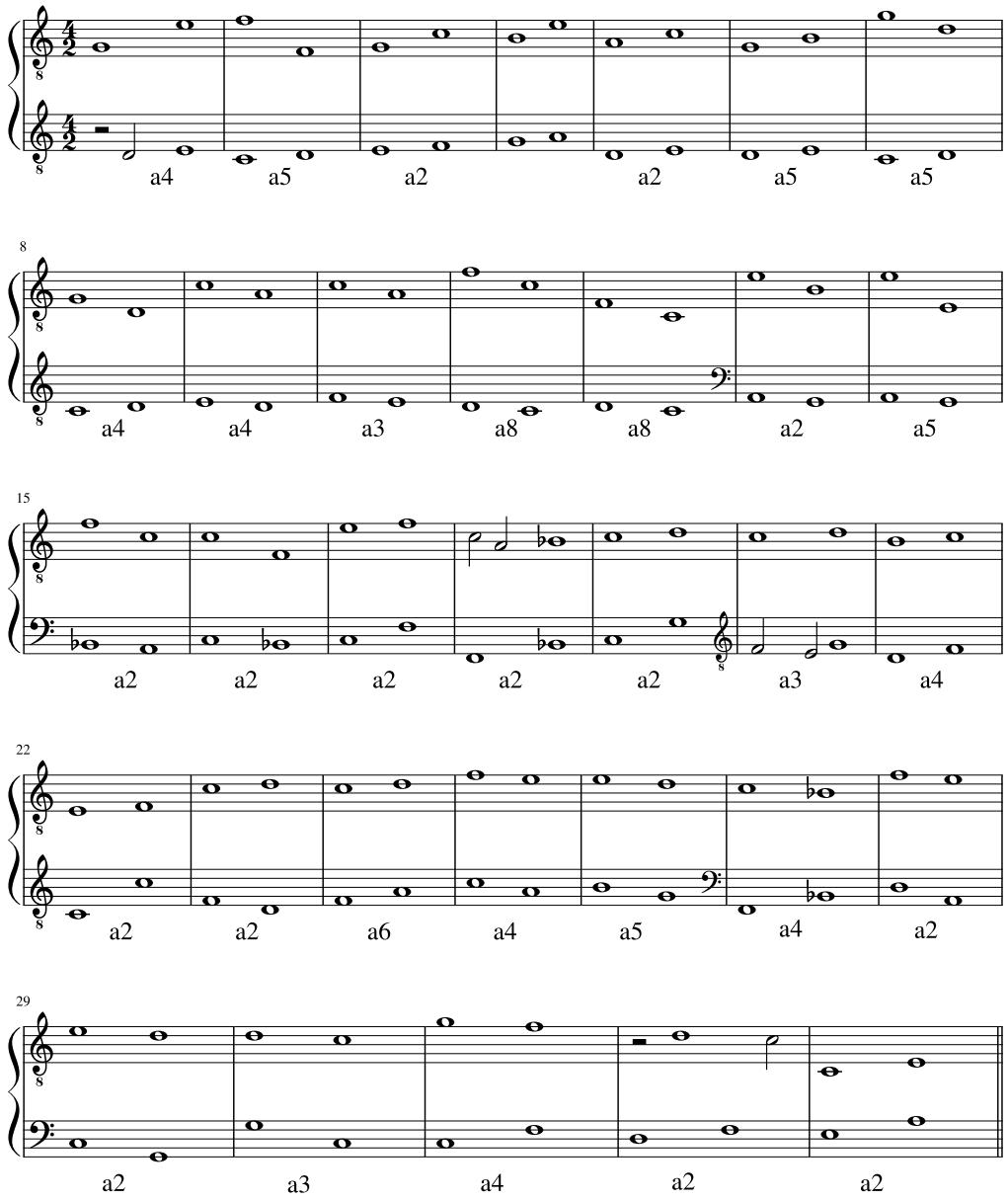
(Specifically with regard to counterpoint and voice-leading)

Choosing a Renaissance Treatise

Nicola Vicentino:
'Ancient Music Adapted to Modern Practice' (1555)

- Hundreds of examples of two-part counterpoint
- Specifies the minimum number of voices for each

Vicentino (1558); Book II, Chapter 29, "*On Various Steps and Leaps Placed Above and Below, Ascending and Descending Together.*"



Choosing a Renaissance Composer

- Palestrina widely held as exemplar of Renaissance contrapuntal style
- Masses written for between 3 and 8 voices

(masses conveniently already symbolically encoded!)

Narrowing the Scope of "Contrapuntal Practice"

- Only examples moving to perfect intervals
- Any example in **two-part counterpoint** with **no rhythmic interpretation** given

Total ('Good' and 'Bad'): 95 examples

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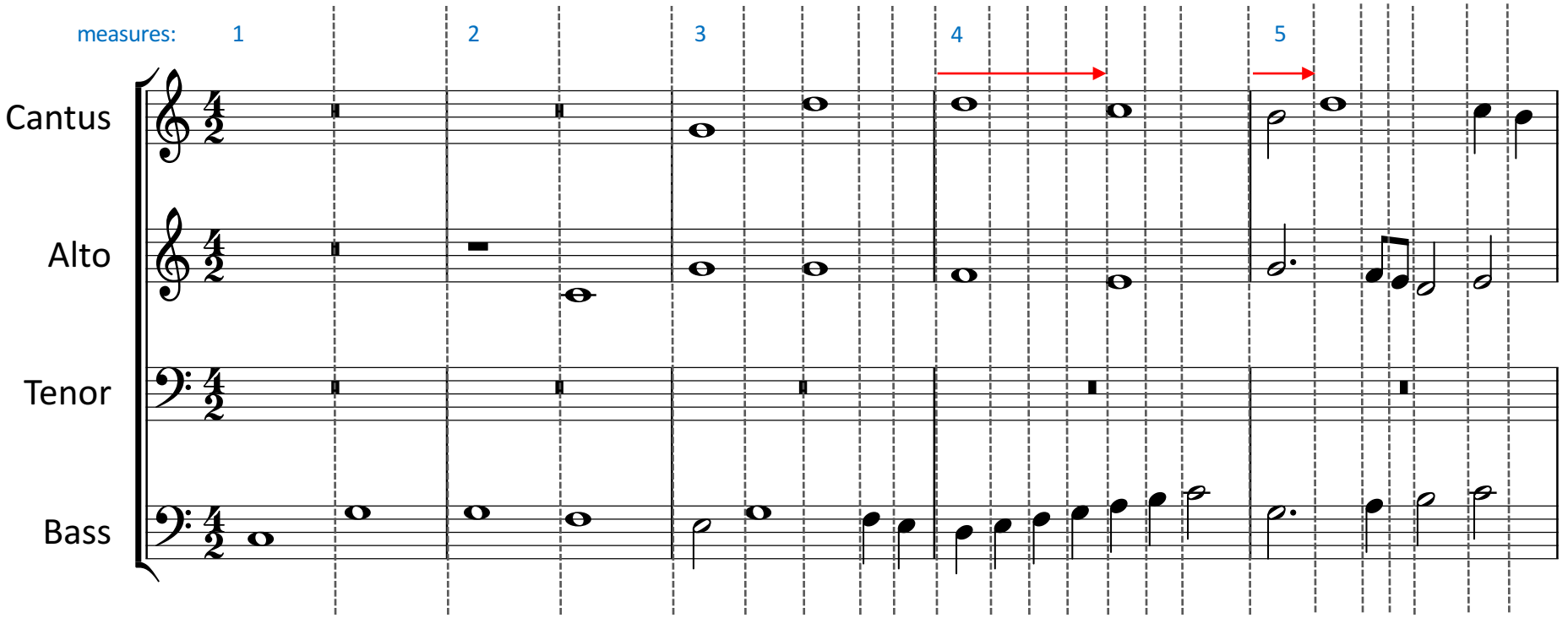
Only prohibitions: 54 examples

Corpus Analysis

- Palestrina's 104 masses (707 movements)
- Vertically "slice" the music at any new attack (salami slicing)

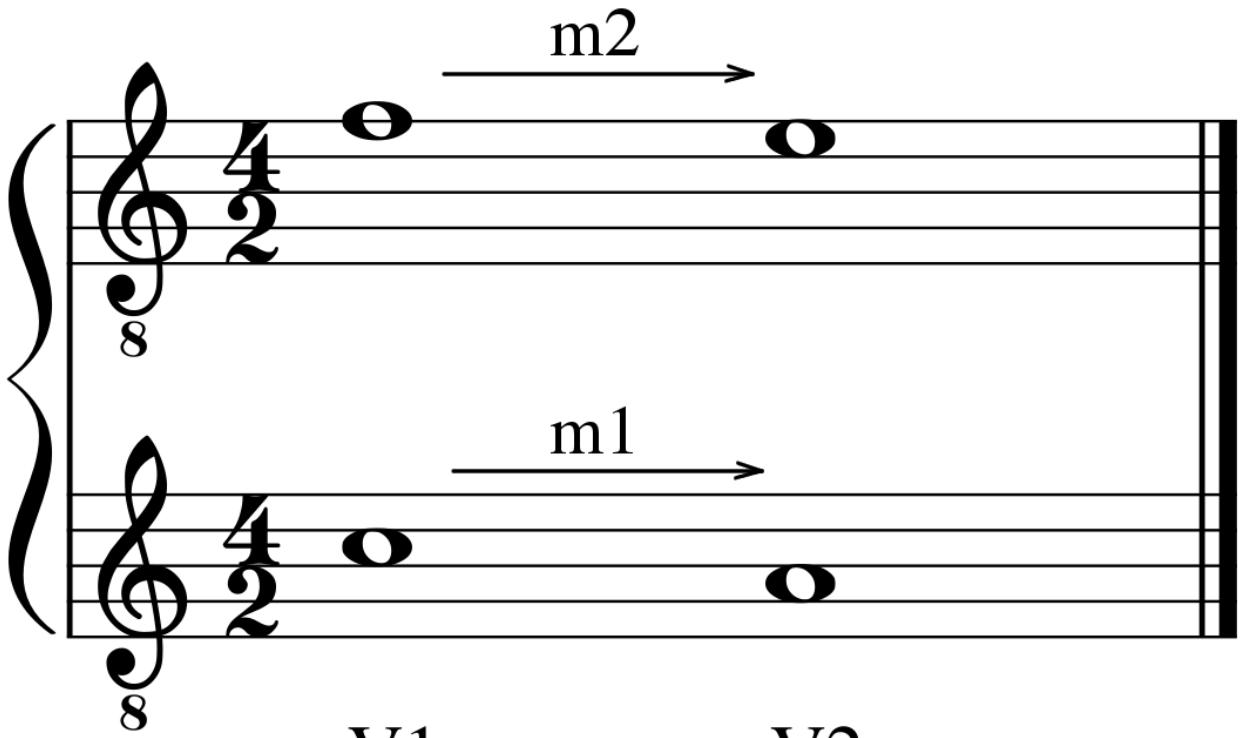
Example of “Salami Slicing”



Corpus Analysis

- Palestrina's 104 masses (707 movements)
- Vertically "slice" the music at any new attack (salami slicing)
- For each pair of voices in texture, look at a sliding 2-slice window and calculate all horizontal and vertical intervals (2-gram)

2-gram



(Antecedent) (Consequent)

String Representation: “V1, m1, m2, V2”

Computational Analysis

- Each 2-gram gets entered into a large table with the following information attached:
    - The 2 voices (parts) participating in the 2-gram
    - Pitches that generate the 2-gram
    - Mass and movement title
    - Beat and measure position
    - The resulting type of motion (contrary, oblique, etc.)
    - Total number of voices in the texture… at that moment*

Assumptions

- Compound vertical intervals reduced to their simple counterparts (horizontal intervals were not)

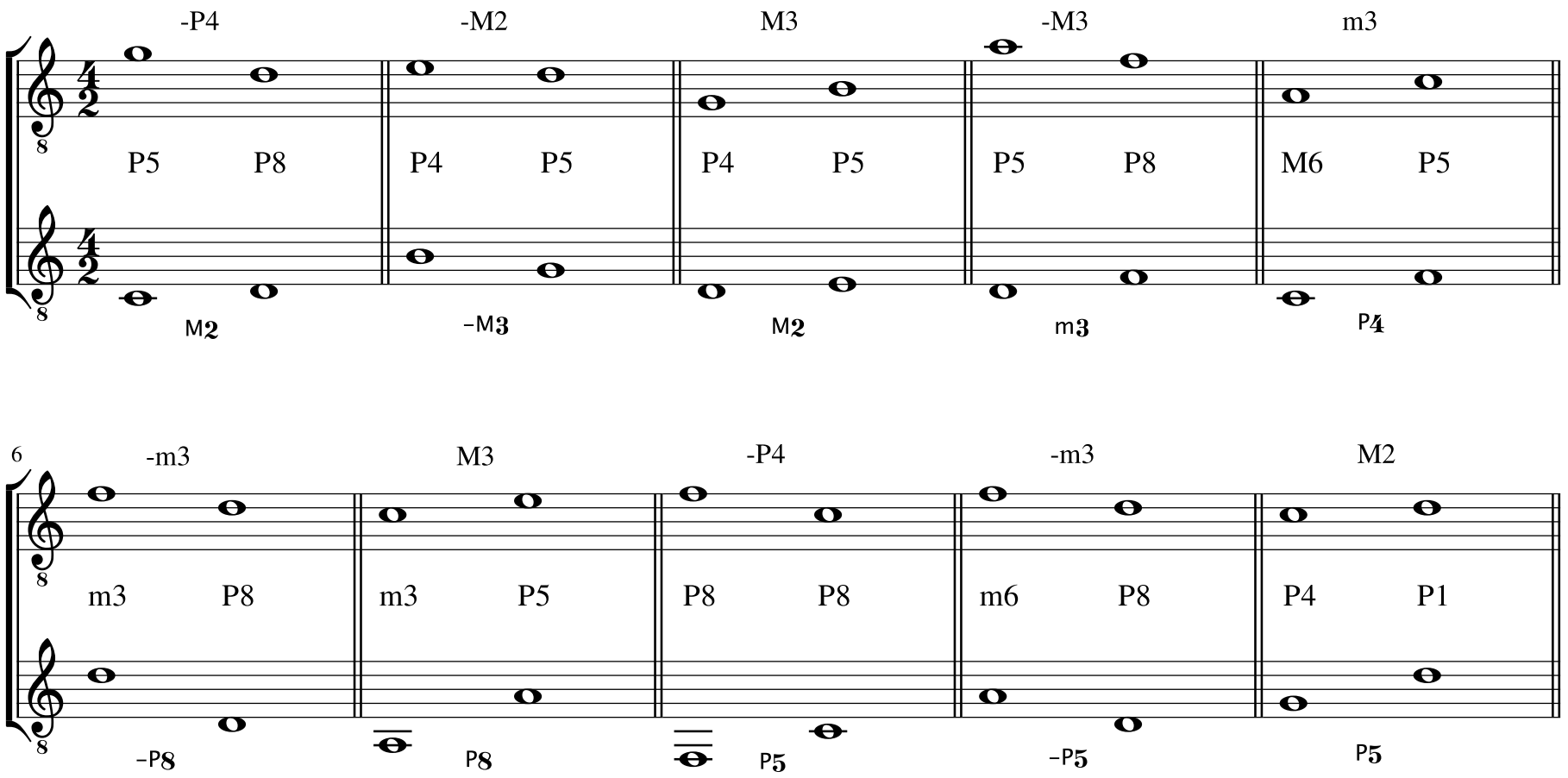
(Voice leading is preserved, and in most cases
we can know whether a given interval was greater
than an 8ve or not)

Assumptions

- Compound vertical intervals reduced to their simple counterparts (horizontal intervals were not)

- Examples written with particular pitch classes can be thought of as equally ‘bad’ if transposed (i.e. focus on interval content)

Vicentino's Voice Leading Rules for 5+ voices



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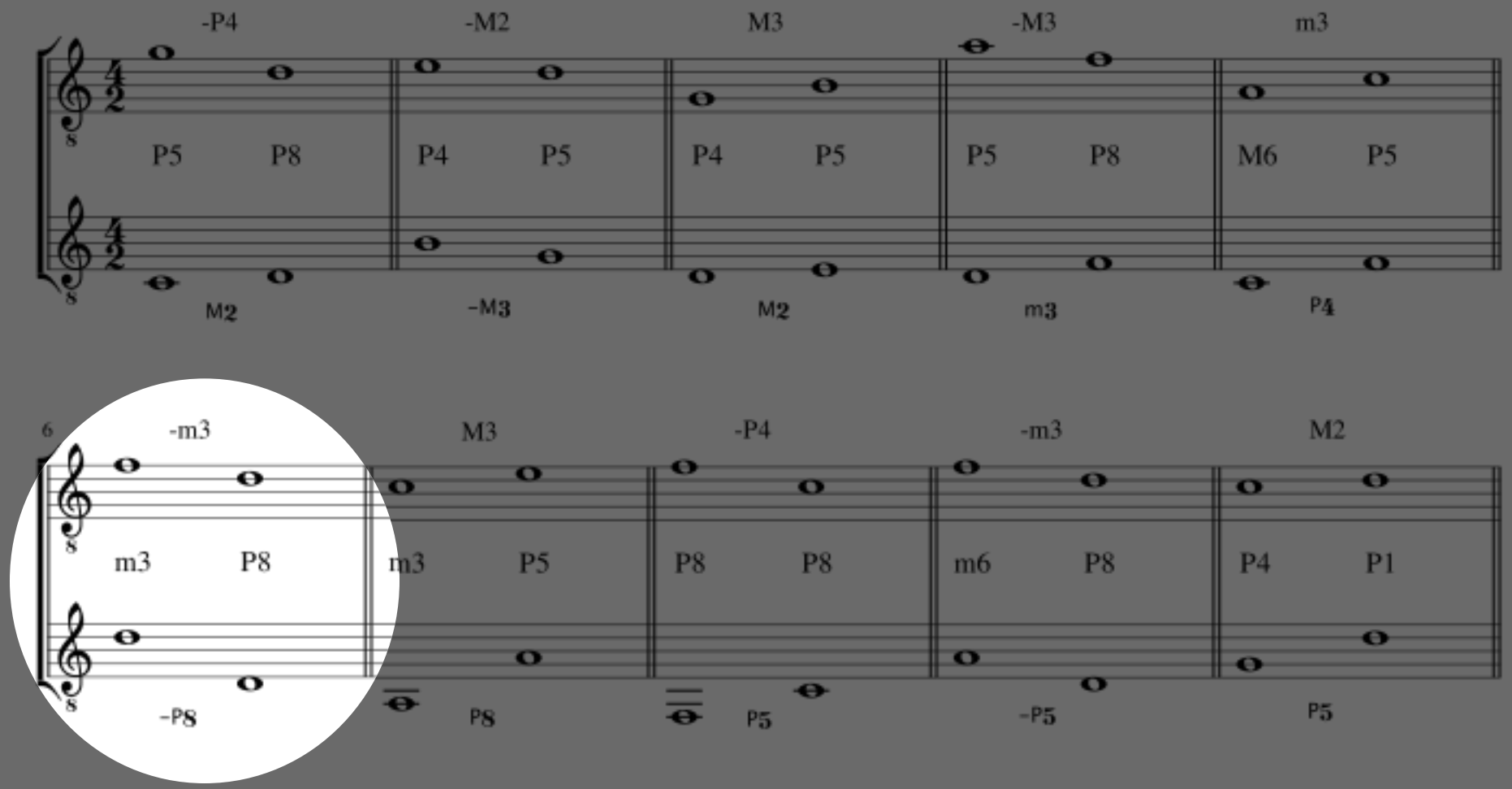
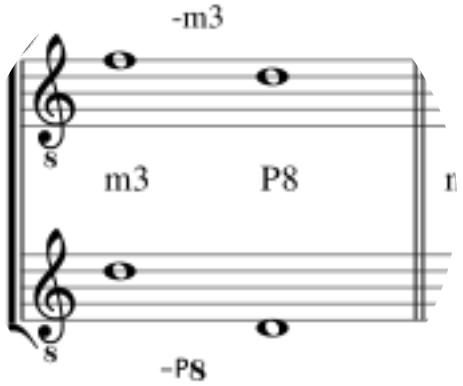


Instances of single “a 5” rule:

m3 -P8 -m3 P8



	Ante	Lower	Upper	Consq	Voicepair	TotalVox	UpperNote	LowerNote	BeatPos	Motion	Measure	Title
306.0	m3	-P8	-m3	P8	1,3	5	C5	A4	0.0	Sim_Descend	42	Ascendo_ad_Patrem_Agnus_II_5.mid
130.0	m3	-P8	-m3	P8	0,4	5	F5	D4	1.0	Sim_Descend	17	Aspice_Domine_Agnus_I_5.mid
331.0	m3	-P8	-m3	P8	1,3	5	C5	A4	1.5	Sim_Descend	42	Aspice_Domine_Agnus_I_5.mid
335.0	m3	-P8	-m3	P8	1,7	7	F4	D4	3.5	Sim_Descend	42	Confitebor_tibi_Agnus_I_8.mid
83.0	m3	-P8	-m3	P8	0,7	8	F5	D4	1.5	Sim_Descend	11	Confitebor_tibi_Sanctus_8.mid
842.0	m3	-P8	-m3	P8	2,7	8	F4	D4	0.0	Sim_Descend	116	Confitebor_tibi_Sanctus_8.mid
842.0	m3	-P8	-m3	P8	4,7	8	F5	D4	0.0	Sim_Descend	116	Confitebor_tibi_Sanctus_8.mid
225.0	m3	-P8	-m3	P8	6,7	8	F4	D4	0.5	Sim_Descend	29	Confitebor_tibi_Sanctus_8.mid
597.0	m3	-P8	-m3	P8	2,4	5	F4	D4	2.5	Sim_Descend	75	De_Beata_Marie_Virginis_(III)_Credo_5.mid
367.0	m3	-P8	-m3	P8	4,7	7	F5	D4	3.5	Sim_Descend	46	Fratres_Ego_Enim_Accepi_Agnus_8.mid
411.0	m3	-P8	-m3	P8	0,3	7	F5	D4	1.5	Sim_Descend	52	Fratres_Ego_Enim_Accepi_Kyrie_8.mid
192.0	m3	-P8	-m3	P8	2,4	4	C4	A3	0.0	Sim_Descend	25	In_illo_tempore_Agnus_5.mid
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580.0	m3	-P8	-m3	P8	2,3	5	F4	D4	2.0	Sim_Descend	73	Octavi_toni_Gloria_6.mid
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957.0	m3	-P8	-m3	P8	1,4	5	F4	D4	2.5	Sim_Descend	120	Sicut_lilium_inter_spinas_Gloria_5.mid
45.0	m3	-P8	-m3	P8	0,2	3	C5	A4	2.5	Sim_Descend	6	Tu_es_Petrus_(1887)_Credo_6.mid
144.0	m3	-P8	-m3	P8	2,4	5	F4	D4	0.0	Sim_Descend	19	Vestiva_i_colli_Gloria_5.mid
44.0	m3	-P8	-m3	P8	0,5	6	F5	D4	2.0	Sim_Descend	6	Viri_Galilaei_Kyrie_6.mid

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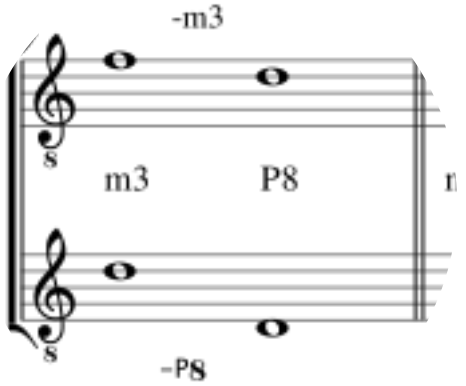

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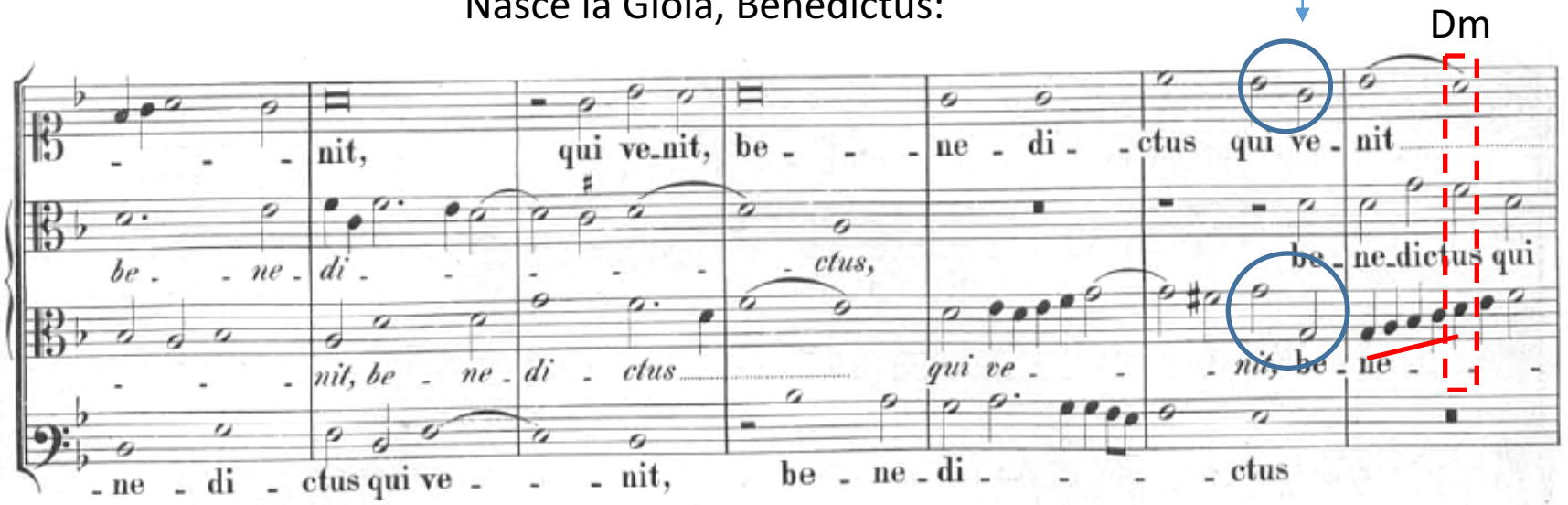
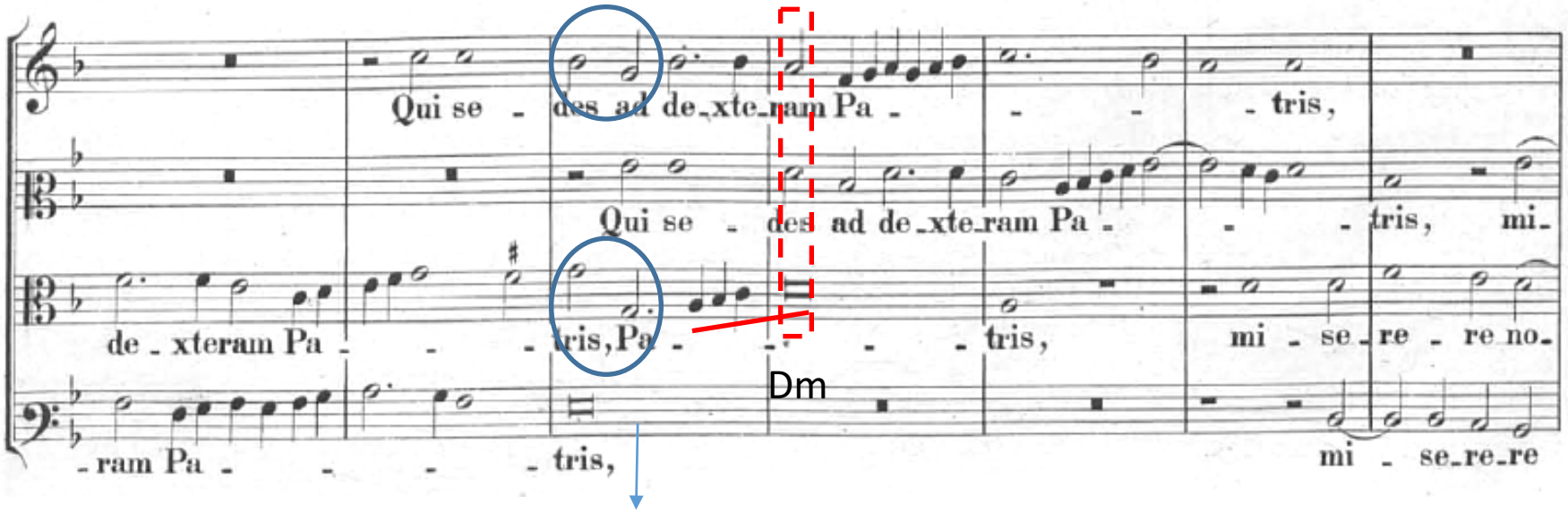
Open 5th (G-D)

Nasce la Gioia, Benedictus:



O Regem Coeli, Gloria:



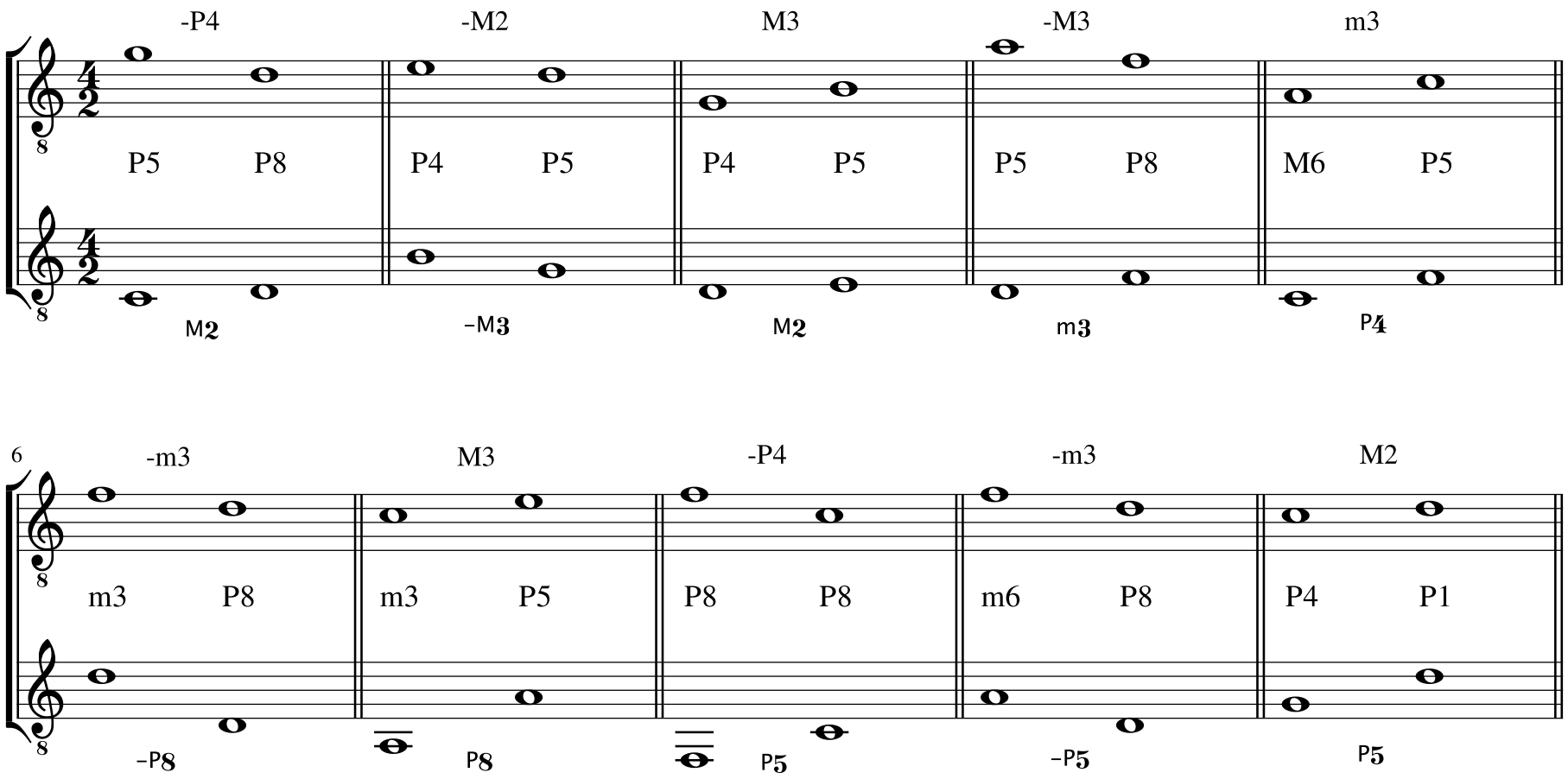
Octaves (all G)

What Do We Need to Consider?

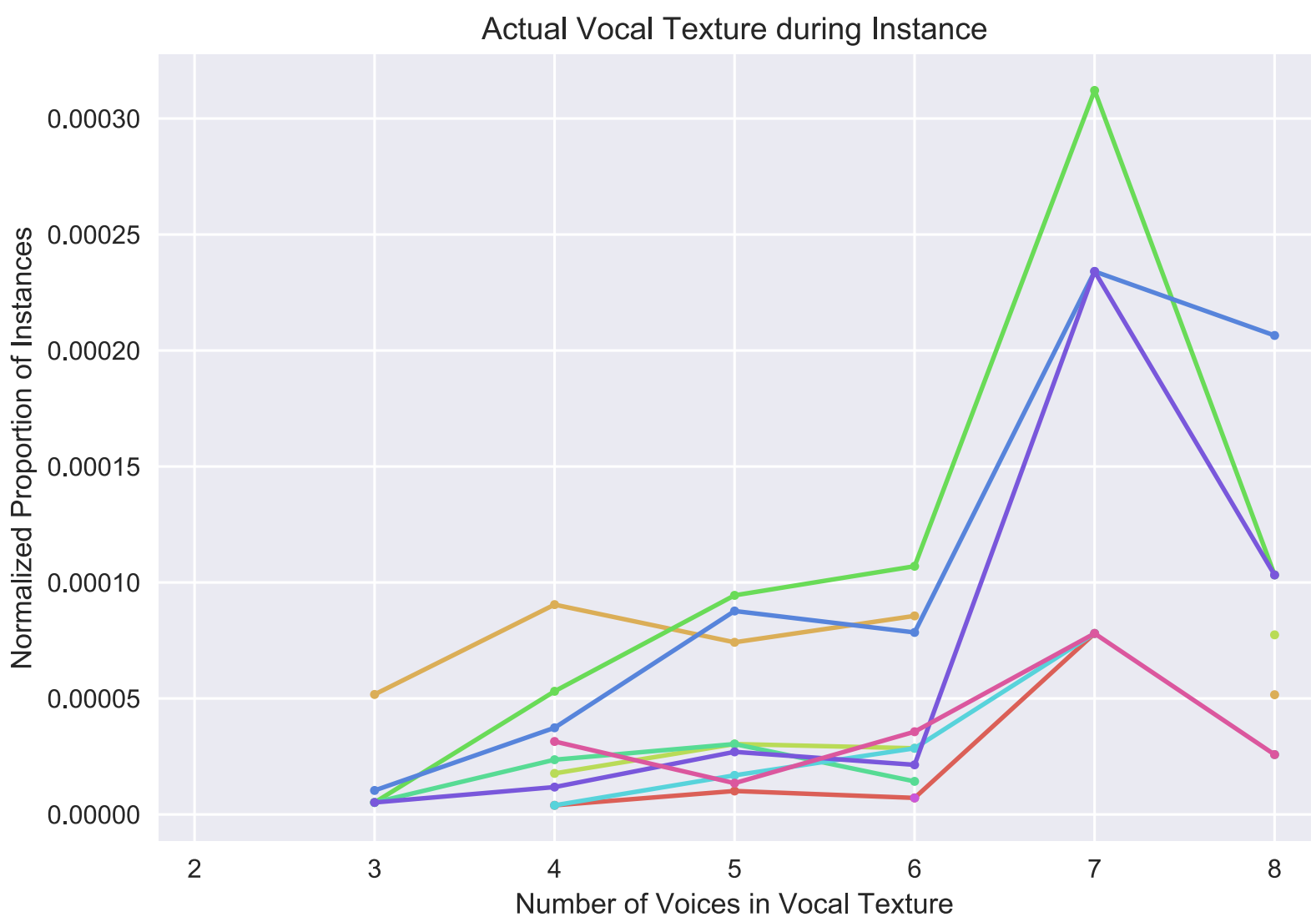
- 8 voice texture allows for greater number of intervallic relationships than is afforded by a 3 voice texture
- Uneven distribution of vocal textures in corpus:

Number of voices	Percent of movements	Percent of all intervals
8	4.2	3.2
7	0.7	1.0
6	22.6	11.6
5	37.1	24.5
4	34.5	42.1
3	0.9	16.0
2	0	1.6

Vicentino's Voice Leading Rules for 5+ voices



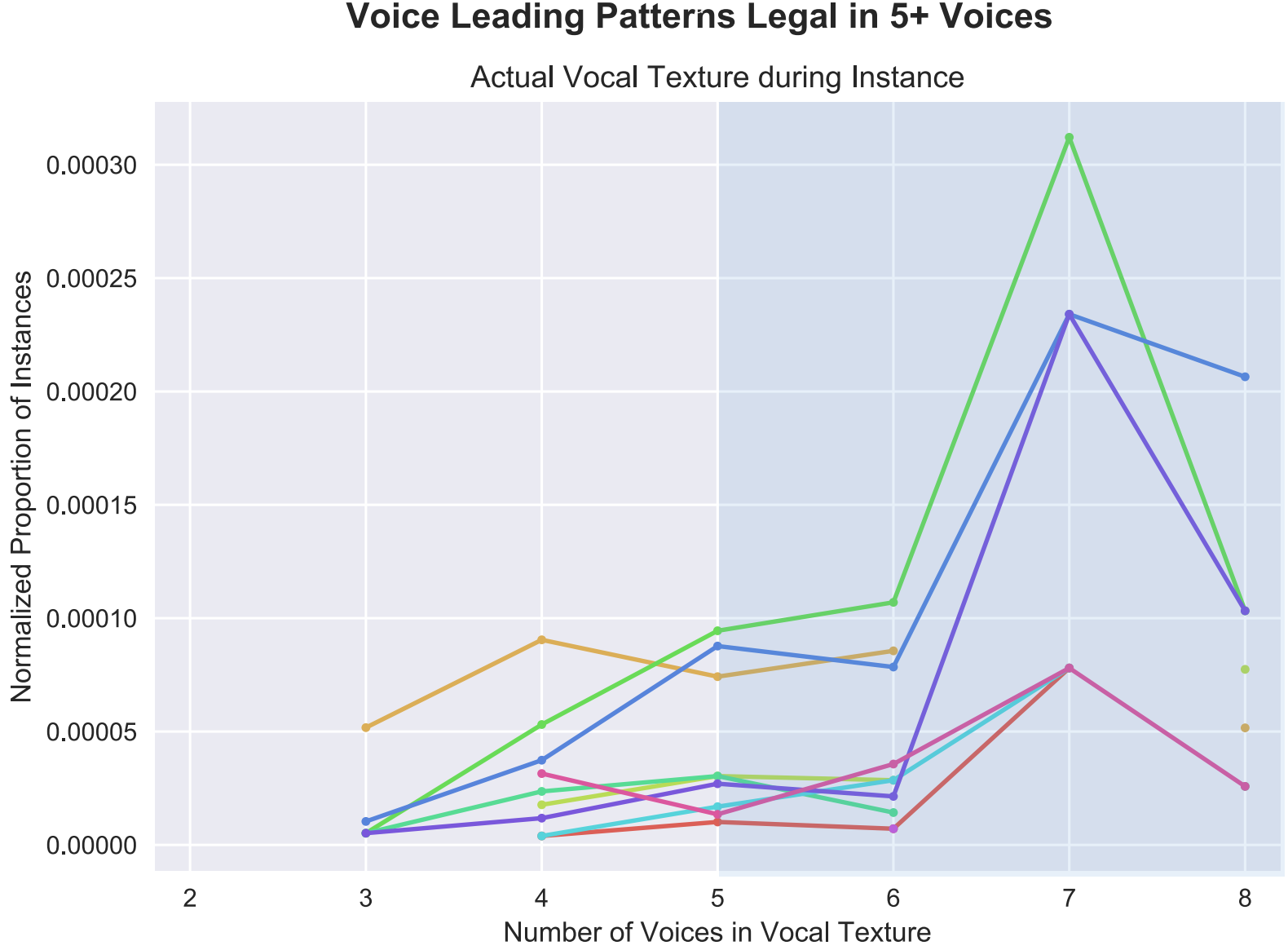
Corpus Results



VL Patterns that never occur: 0/10

VL Patterns that occur only once: 1/10

Corpus Results



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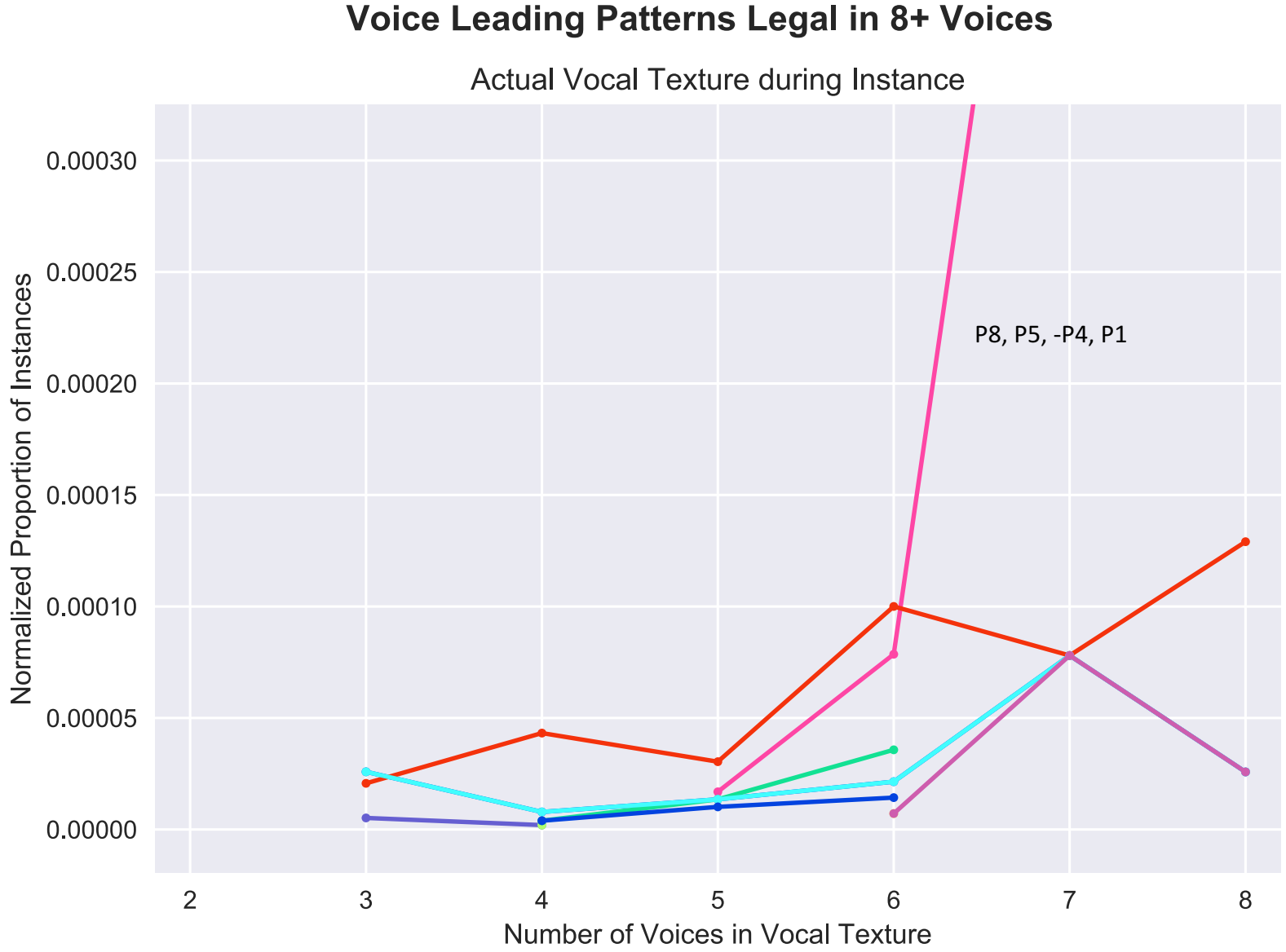
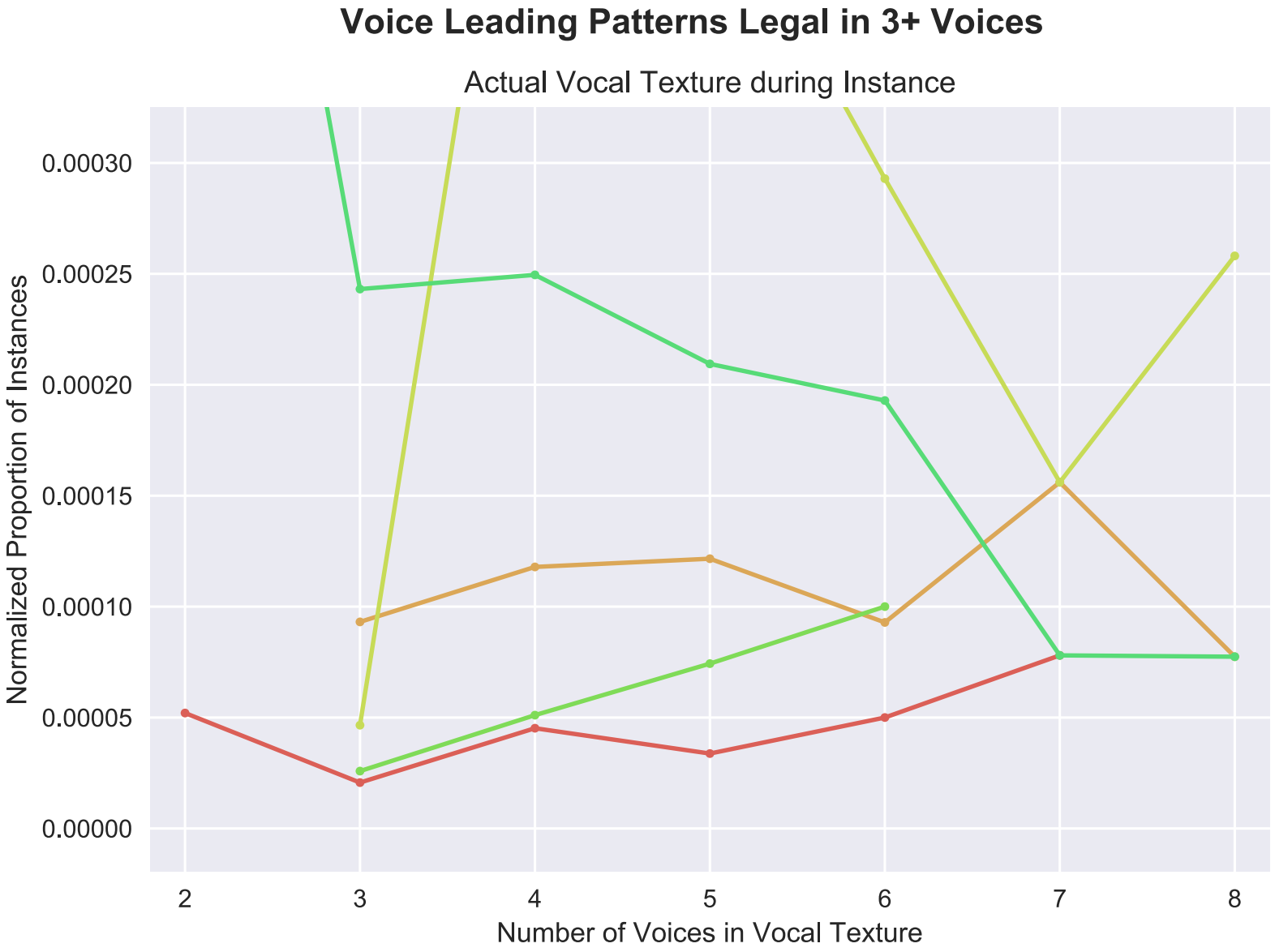


VL Patterns that never occur: 3/13

VL Patterns that occur only once: 2/13

Corpus Results



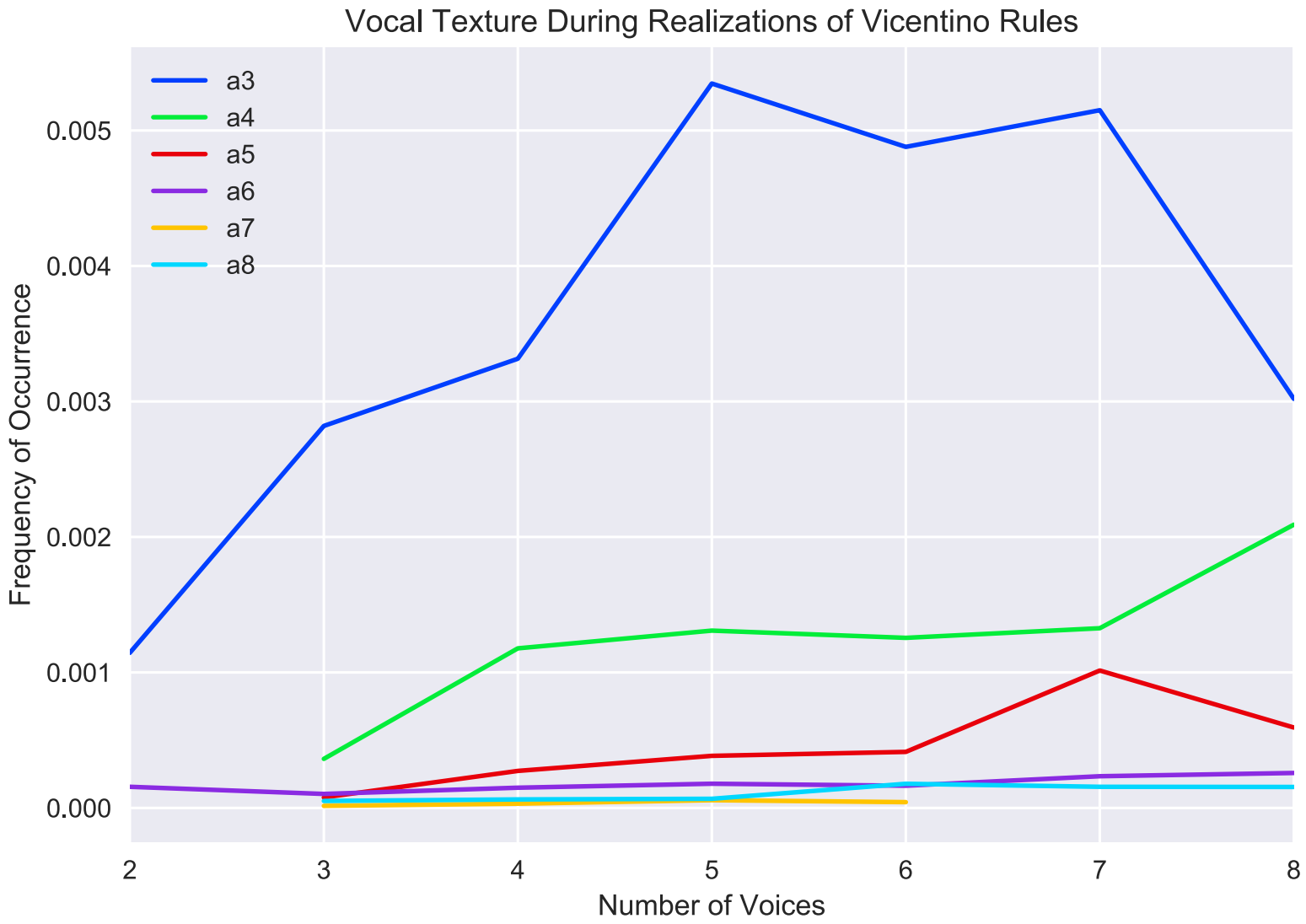
VL Patterns that never occur: 0/6

VL Patterns that occur only once: 0/6

(Pattern with lowest number of occurrences: 46!)

Corpus Results

Voice Leading Patterns Grouped By "Rule Class"



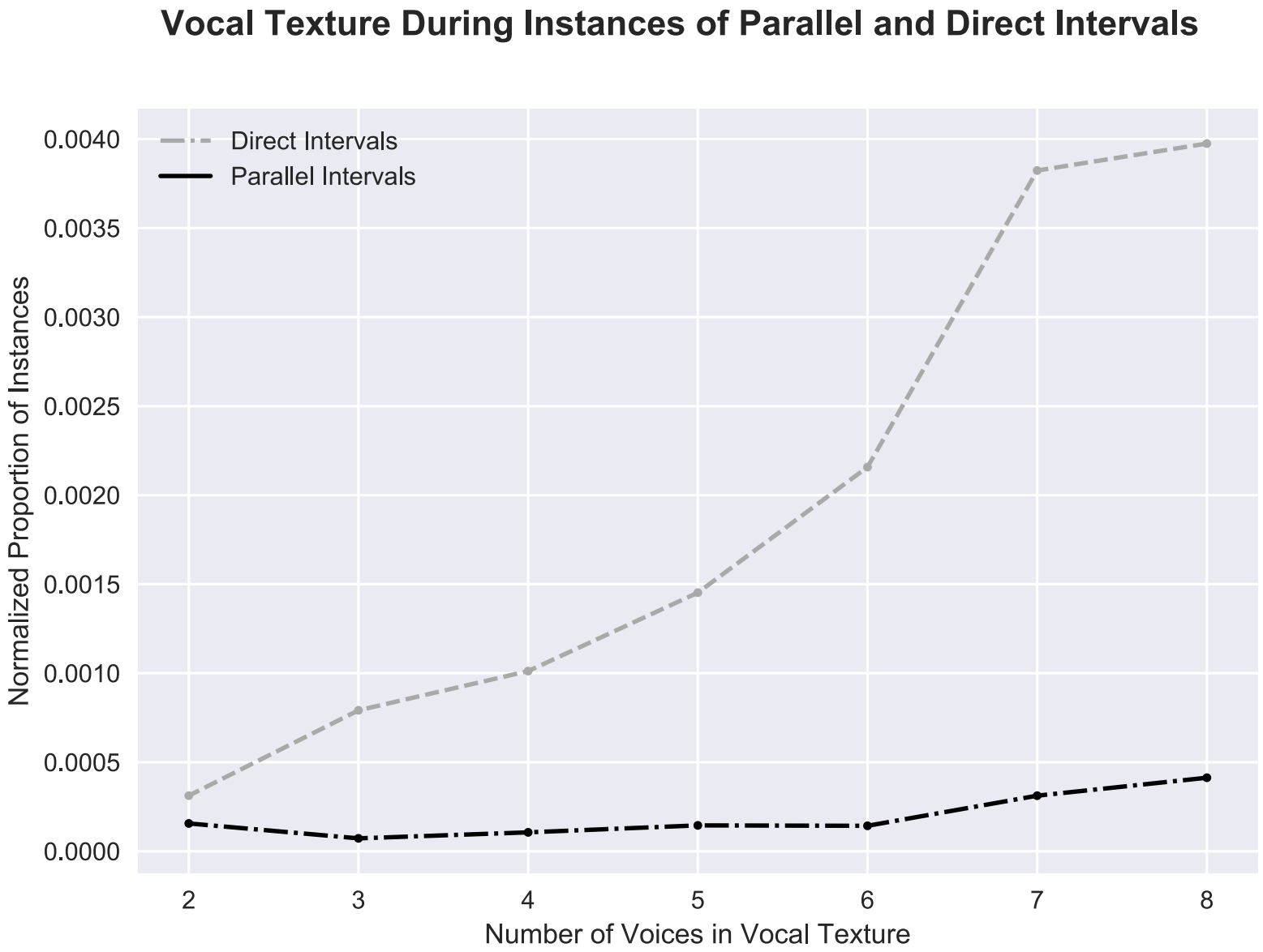
Parallel and Direct Perfect Intervals

- Parallel and direct perfect intervals represent instances of so-called “hard” and “soft” rules, respectively
- Modern formulations of this rule vary
- The most common version:
  - Two voices must not move in similar motion into a perfect interval unless the upper-most voice moves by step.

Vicentino's Guidelines in Prose

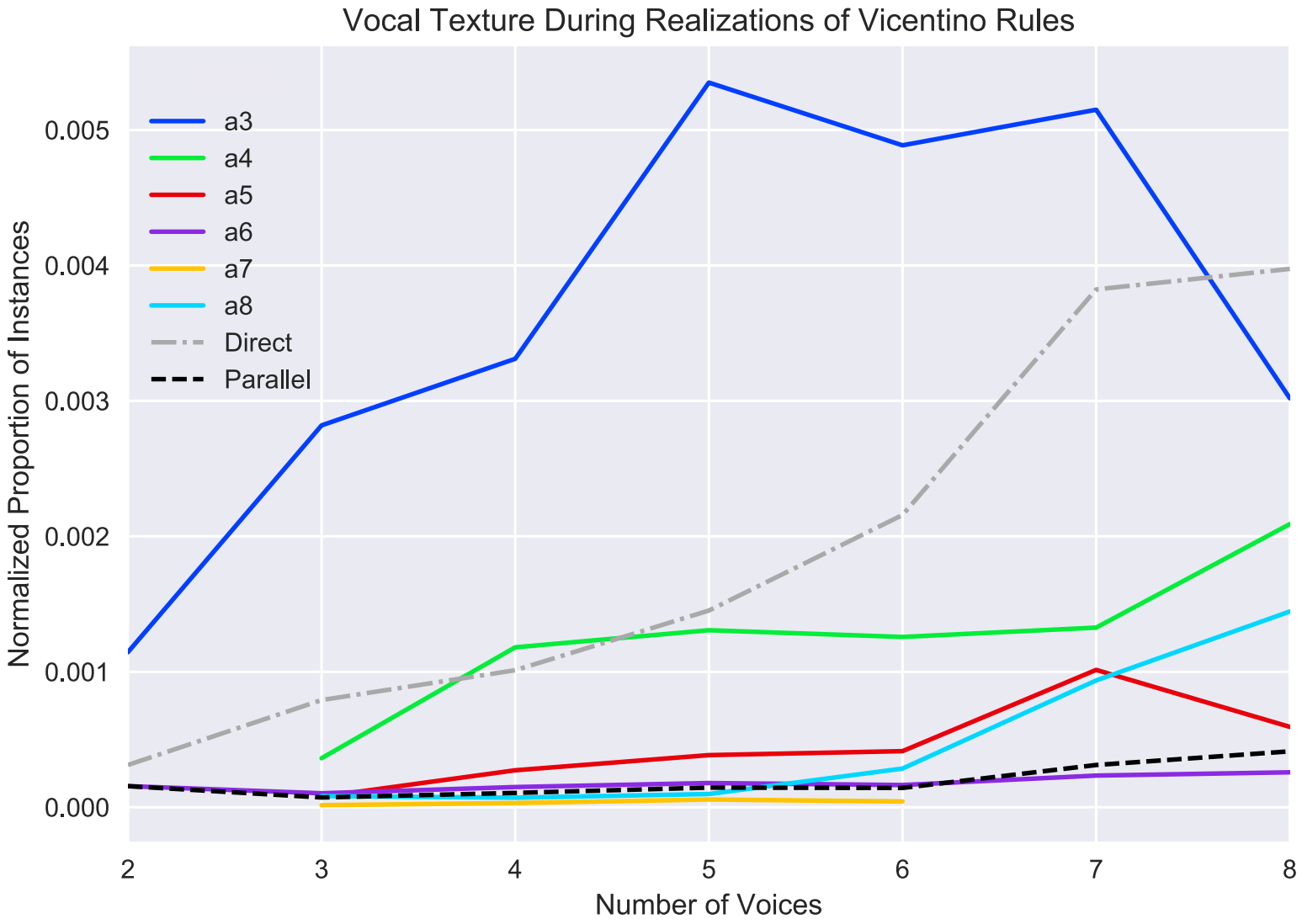
- Clear prohibition against parallel octaves and fifths
- No direct instruction on both voices leaping into perfect interval.

Parallel and Direct Perfect Intervals



- Instances of Direct Intervals: 1,609
- Instances of Parallel Perfect Intervals: 154

Parallel and Direct Perfect Intervals



Conclusion

- By the present definitions, it appears Palestrina's voice leading is not exactly consistent with the specific guidelines offered by Vicentino
- However, there is a general trend where "poorer" progressions become increasingly rare, and more likely to be "hidden" in thicker textures
- No such thing as a "hard" rule? (Even parallels occur)

Thank You!

Special thanks to Peter Schubert and Julie Cumming for their expertise

Extra-special thanks to Cory McKay for presenting my research on my behalf!

Questions or comments? Email: **claire.arthur@mcgill.ca**

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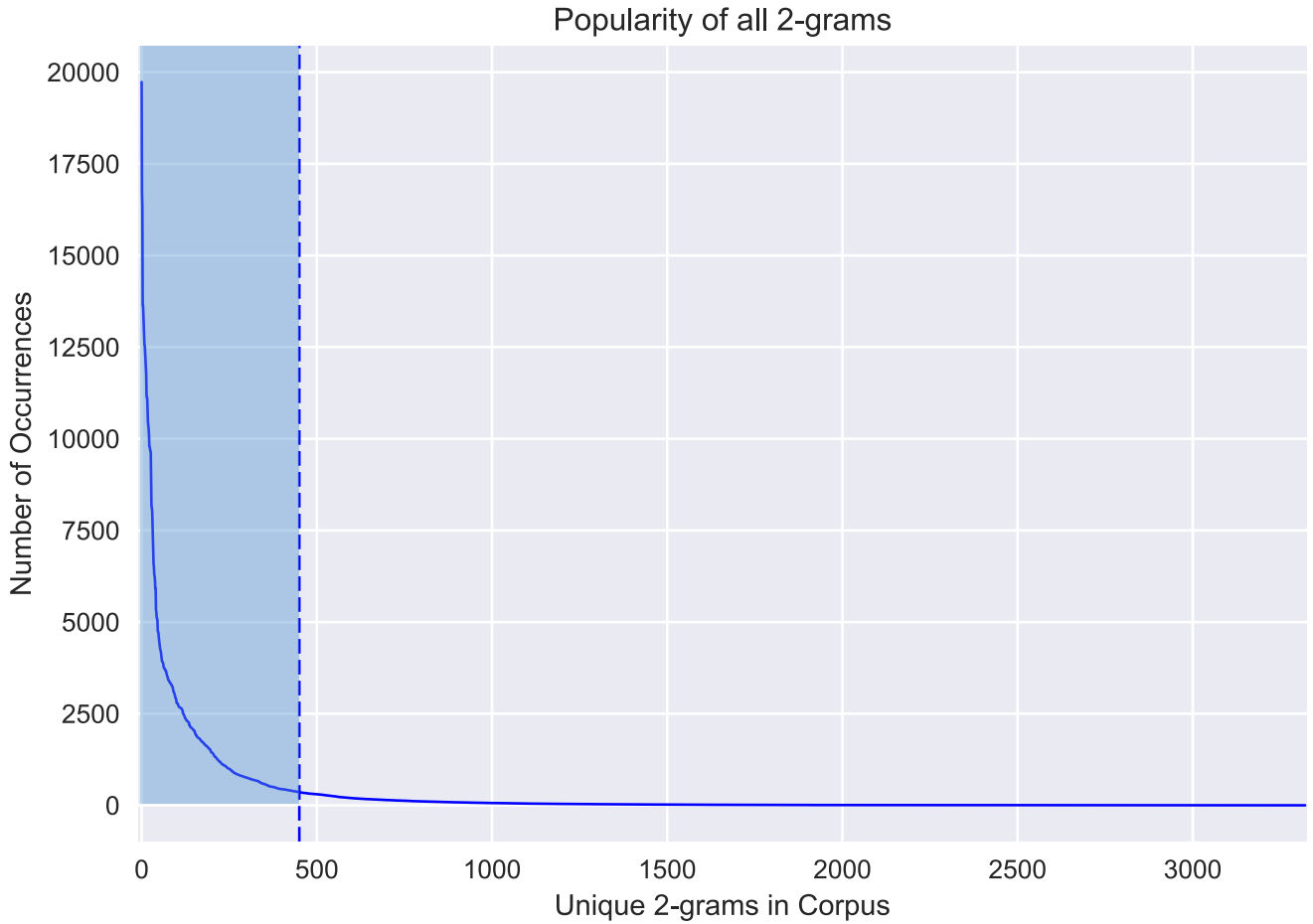
Which Patterns are Most/Least Common?

- Although there are 3,326 unique voice-leading patterns, **450 of them** account for the voice-leading **in 90% of the corpus**



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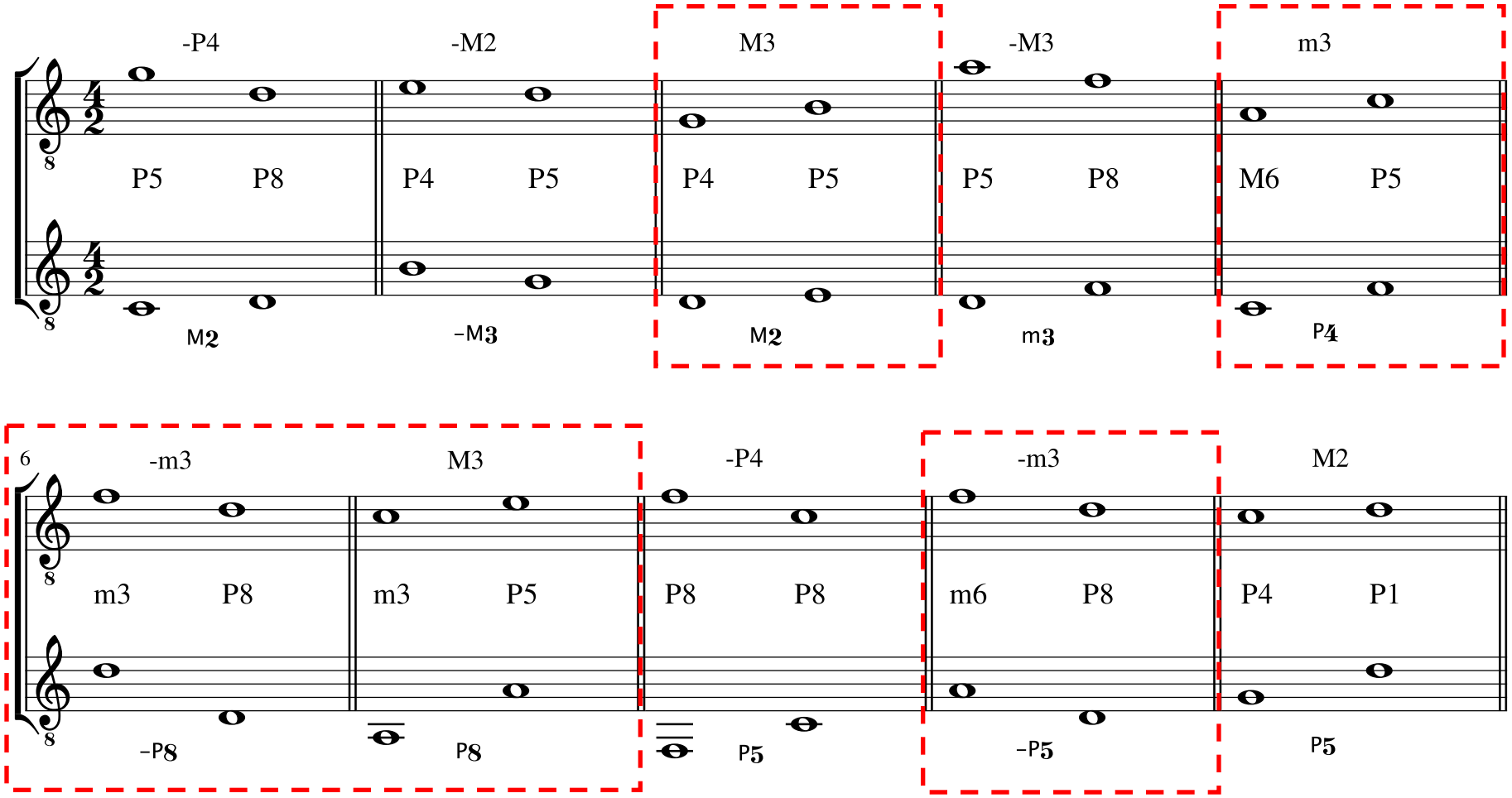

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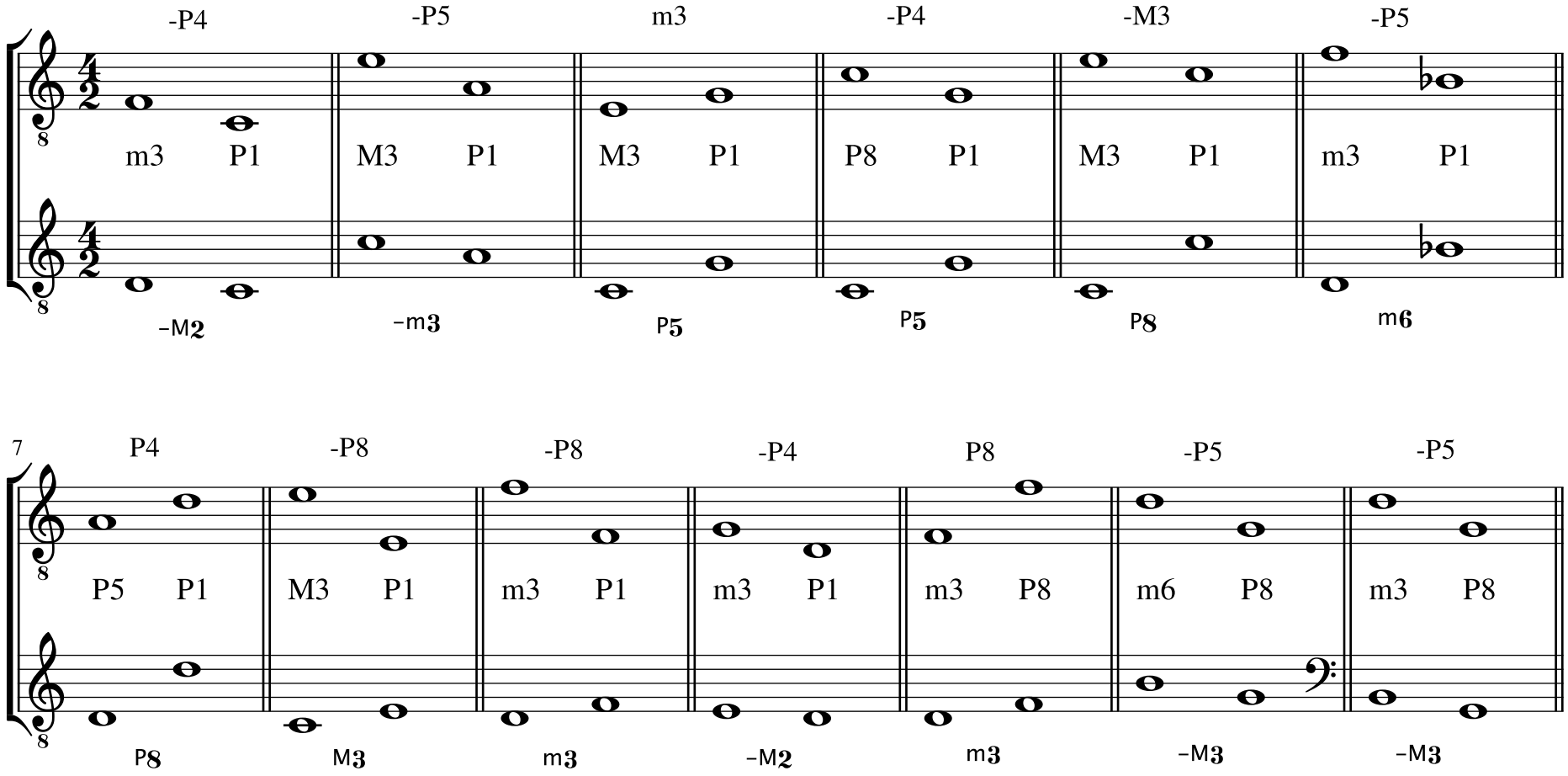
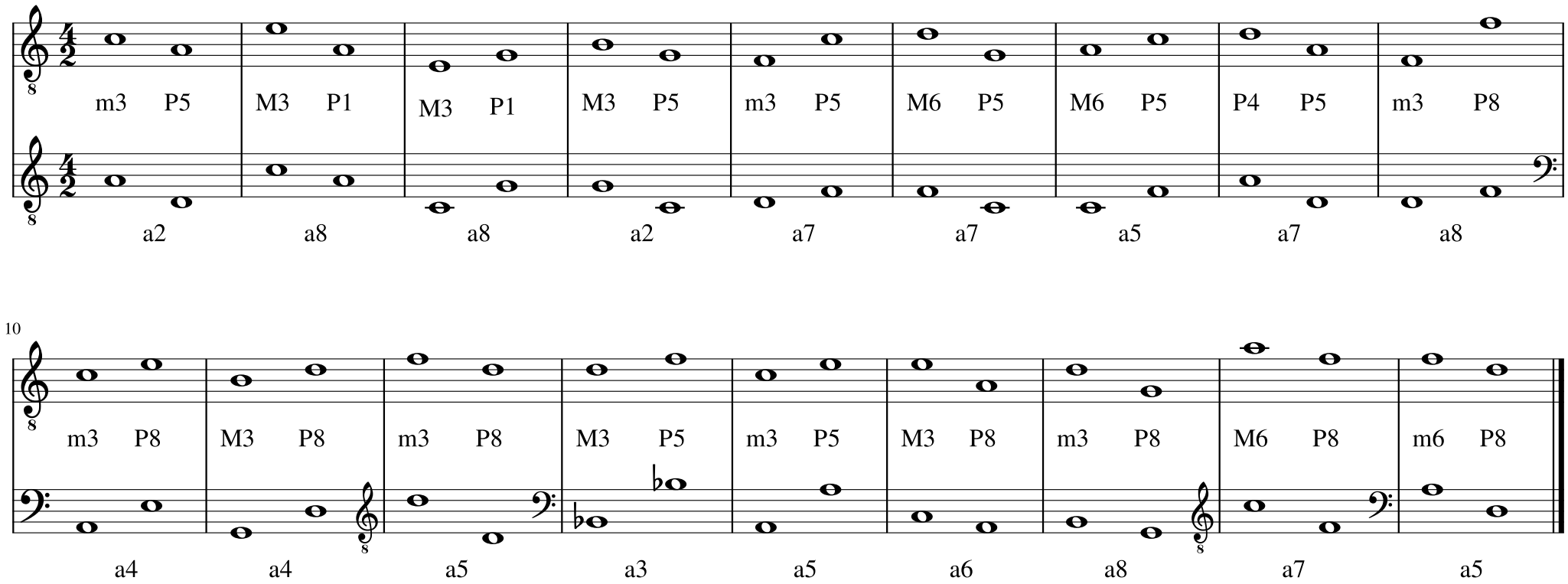
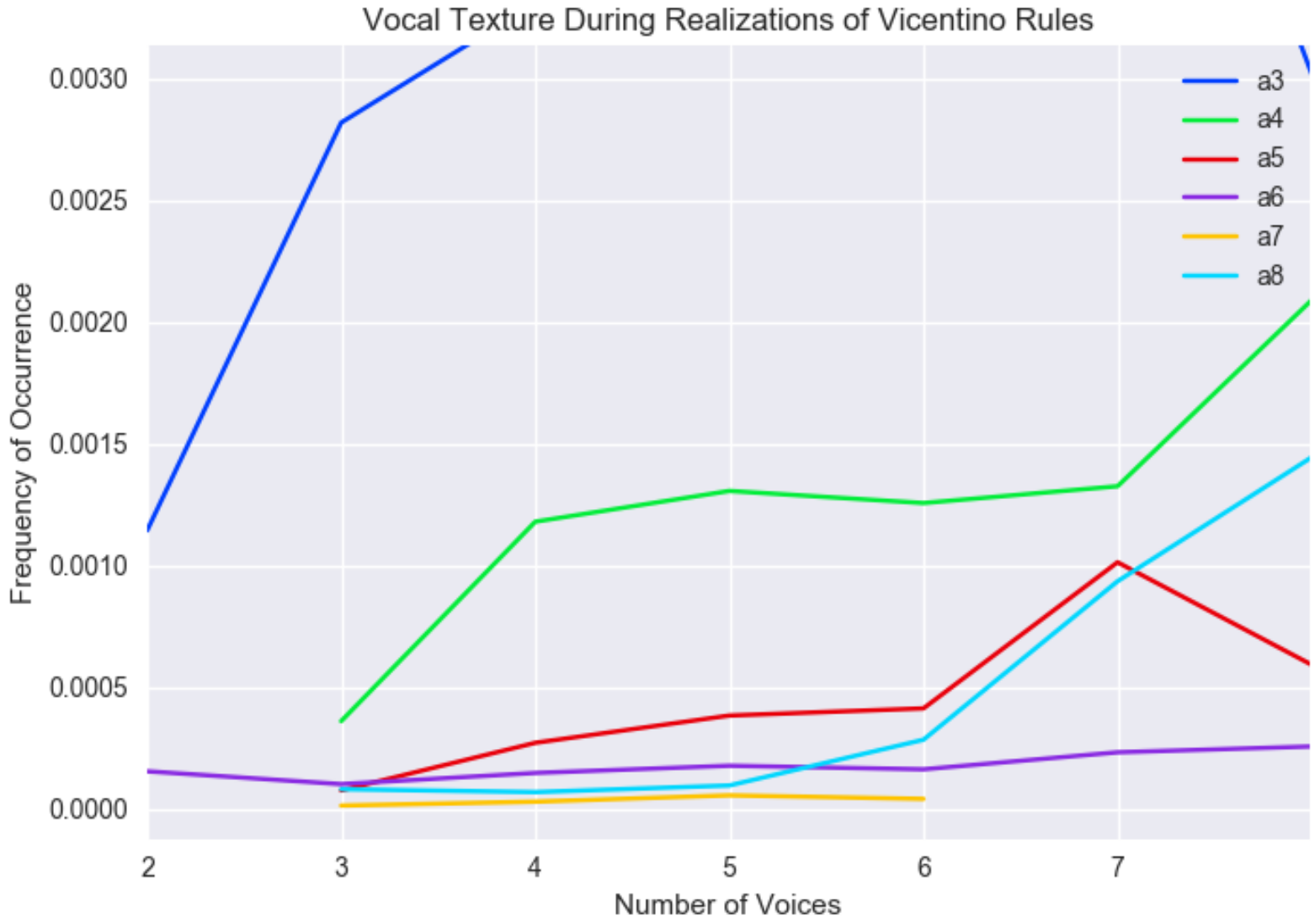


Examples of Direct Perfect Intervals



Corpus Results

Voice Leading Patterns Grouped By "Rule Class"



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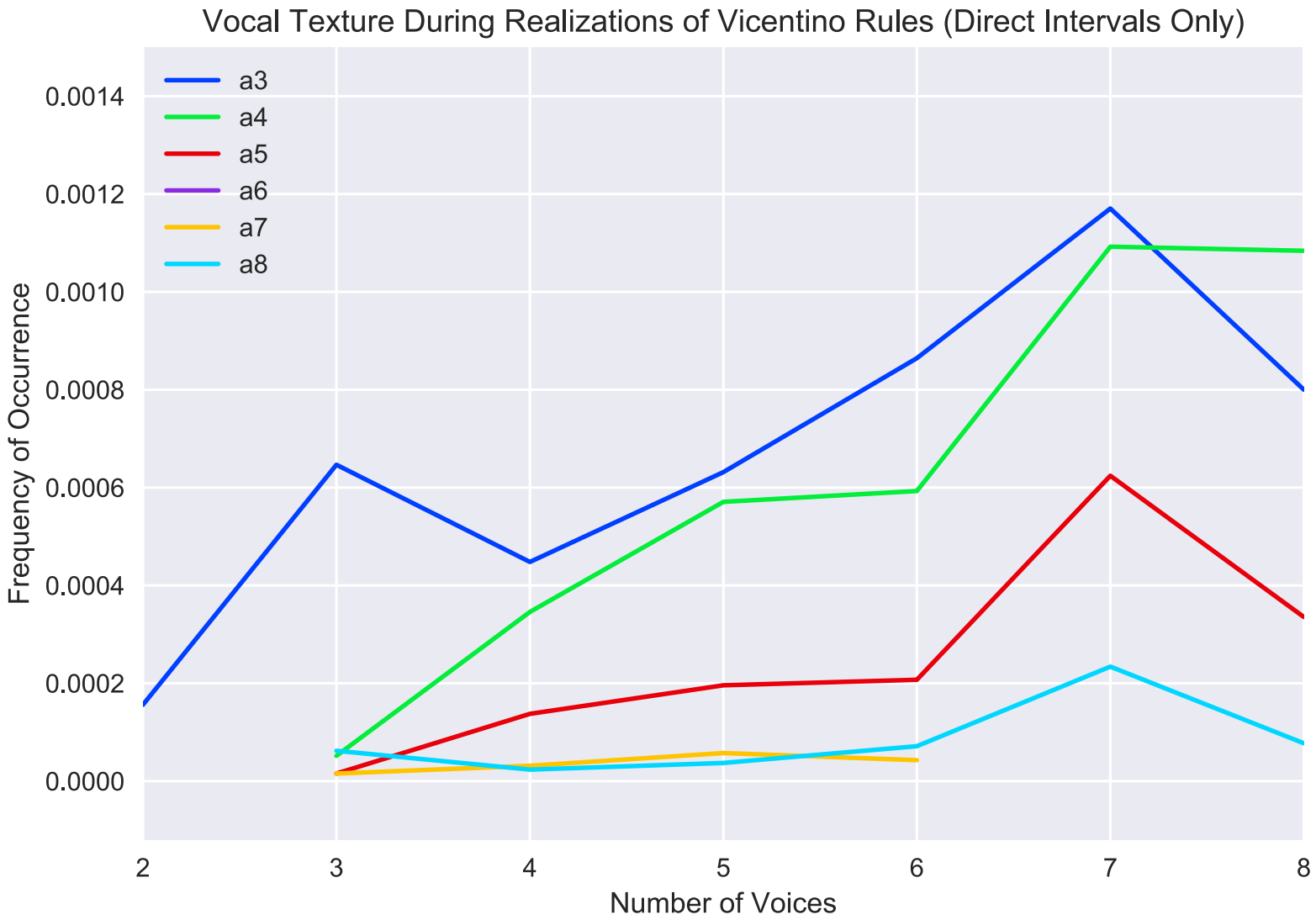

Out of 1,612 total direct intervals…

…1,483 accounted for by Vicentino's rules

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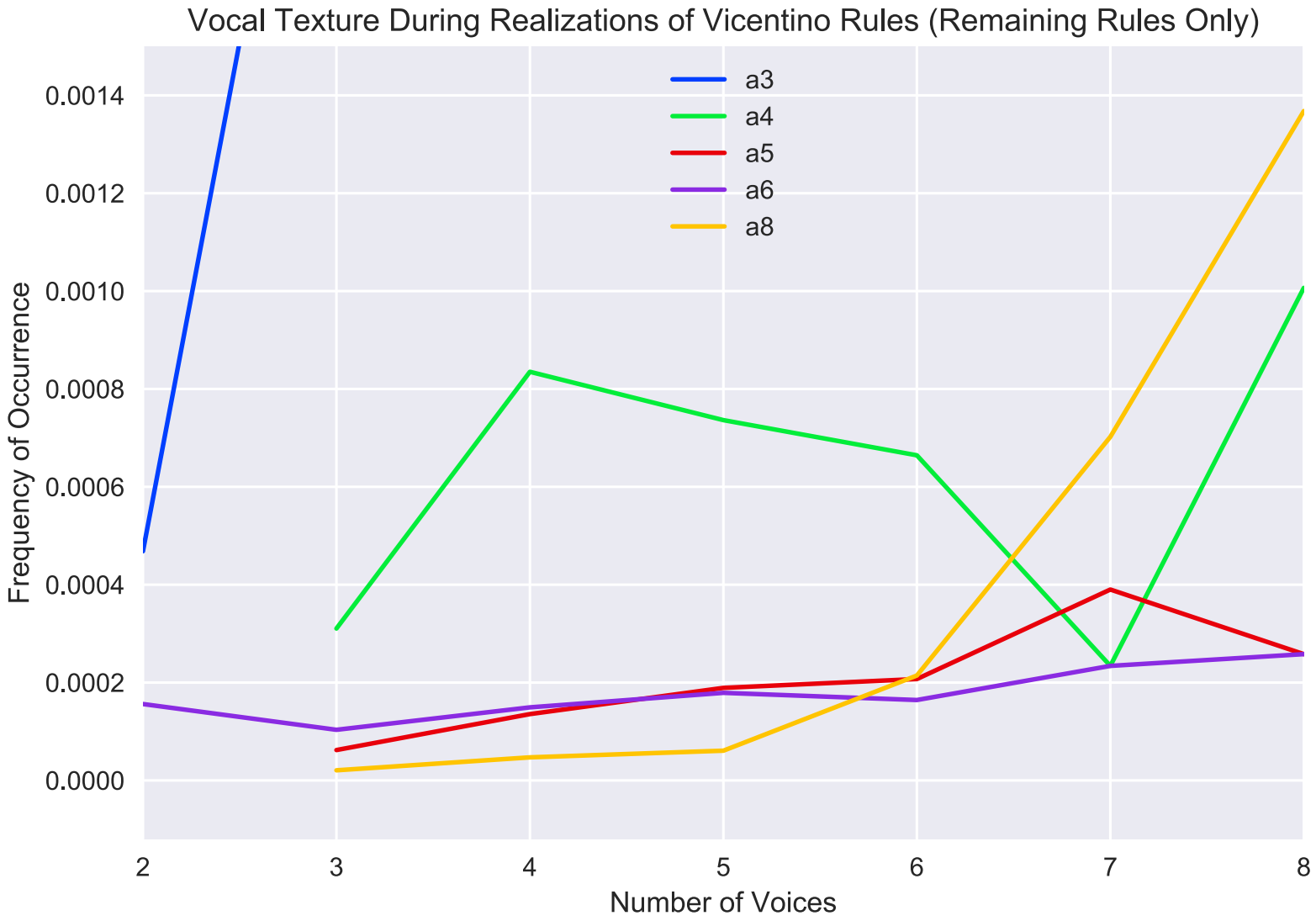
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