

ON THE LACK OF EVIDENCE FOR
NONMYOPIC HARMONY

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1 Introduction

Current phonological theory resorts to a large set of different, usually competing mechanisms to derive assimilatory processes (Search and Copy, Spreading, in derivational frameworks; Align, Agree, Share, and Agreement by Correspondence in Optimality Theory (OT); and others; see Nevins 2010, McCarthy 2011, Gafos and Dye 2011, Walker 2012). One important property that has been attributed to unbounded spreading is myopia (Wilson 2004, 2006, Finley 2008, Nevins 2010: chaps. 4, 6, McCarthy 2011). In a contribution to this journal, Walker (2010) focuses on a complementary issue: whether bounded harmony obeys myopia. Adopting Wilson's (2006:9) definition for unbounded spreading, the affirmative answer can be defined as in (1).

- (1) All attested unbounded spreading processes obey a myopia (“no look ahead”) generalization
- LR→ spreading from T to U is independent of whether spreading can proceed into Z [in] . . . T X U Z . . .
 - ←RL spreading from T to U is independent of whether spreading can extend into Z [in] . . . Z U X T . . .

Walker (2010:169–170) holds the opposite view, which can be worded as in (2).

- (2) There are cases of bounded nonmyopic spreading.¹

Walker claims that there exist cases of harmony in which “adjacent segments undergo assimilation only when a nonlocal viable target is present” (2010:169). She states that she has detected such cases in two Italo-Romance dialects, Grado and Central Veneto, and discusses the consequences of this discovery for phonological theory—in partic-

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A previous version of this squib is part of Mascaró 2015, which, in addition to the discussion of myopia in Grado and Central Veneto (sections 1–2), contains the critical discussion of trigger-target asymmetries in Baiyinna Orochen and Mòbà Yorùbá (sections 3 and 4, respectively), that Walker (2014) has analyzed within Generalized Prominence-Based Licensing (Walker 2011).

Detailed exemplification and sourcing can be found in the online appendix at https://www.mitpressjournals.org/doi/suppl/10.1162/ling_a_00327.

¹ Whether metaphonic spreading is bounded (by a stressed vowel) or unbounded is debated. Several authors (see Calabrese 1985, 1998, 2011, Sluyters 1988, Hualde 1989, Flemming 1994, Cole 1998, Schirru 2012) analyze it as unbounded spreading within a prosodic domain, the stress foot. Walker (2005:975–977, 2011:142–143) argues against such an analysis. To the extent that the evidence shows that metaphony is unbounded, the generalization in (1) should apply to metaphony.

ular, the fact that such cases cannot be handled by serial OT with candidate chains (OT-CC). In a reply, Kimper (2012) shows that, contrary to Walker's claims, under a proper analysis the data can indeed be accounted for in serial OT. In the present reply, I show that Walker's account faces a more serious problem because the empirical base itself is incorrect: close scrutiny shows that in Grado metaphony is, contra Walker, descriptively myopic, and in Central Veneto the evidence available is ambiguous and fails to provide support for nonmyopia.²

Since current available evidence is in favor of myopia, examination of a new case of spreading can have one of three consequences: if it is shown to be nonmyopic, it will disprove (1) (i.e., it will show that nonmyopic spreading is also possible); if it is shown to be myopic, it will (slightly) strengthen (1); or if it manifests neither myopia nor nonmyopia, it will leave (1) unchanged.

2 Metaphony in Grado

Walker (2010) is correct in assuming a regular process of metaphonic harmony that affects paroxytones in the dialects under discussion. For Grado, the sources (in particular, Ascoli 1898, Marin 1985, 1999, and Bottin 2003) clearly indicate that a final high *i* triggers raising of the preceding stressed mid close vowel (*/e/, /o/*) (3a), but low vowels (*/a/, /ɛ/, /ɔ/*) are not affected (3b). The data in (3) (from Walker 2010:170–171, 2005:928) are illustrative of a process that affects most paroxytones, with some exceptions.³

- (3) *Grado*
- | | | | |
|----|------------|------------|--------------------------|
| a. | rómp-o | rúmp-i | 'break-1SG/2SG.PRES.IND' |
| | albor-ét-o | albor-ít-i | 'tree-DIM-M.SG/PL' |
| b. | bél-o | bél-i | 'beautiful-M.SG/PL' |

Since in order to assess whether a spreading process is myopic or not we need at least two targets, paroxytones like those in (3) are irrelevant. In proparoxytones, however, if spreading affects the posttonic when the tonic is affected, the behavior of the posttonic in those cases in which the tonic is not an undergoer will diagnose myopia and nonmyopia. This is shown in (4), which is also relevant for Central Veneto, discussed in section 3. Affected targets are underlined; the examples *zúvin-i* 'young men' and *bodzántin-i* 'crabs before the last molt' are taken from (5) below.

² These results argue against the analysis in Kimper 2012, but not against serial OT, which will in fact predict myopia if Kimper's *SKIP(X) constraints are dispensed with. As for Walker's (2005, 2011) Generalized Prominence-Based Licensing analysis, the results show that it wrongly predicts nonmyopia in Grado and in Central Veneto.

³ Transcriptions are as in Walker 2005, 2010. For other sources with more phonetic detail, I have sometimes simplified the transcriptions whenever this did not affect metaphony.

(4) *Metaphonic raising in proparoxytones triggered by the M.PL*

suffix -i

- a. {e, o, i, u} C₀ {e, o} C₀i a.' /zóven-i/ → zúvĩn-i
 b. {a, e, o} C₀ {e, o} C₀i b.' /bodʒánten-i/ → bodʒántĩn-i *Myopia*
 c. {a, e, o} C₀ {e, o} C₀i c.' /bodʒánten-i/ → bodʒánten-i *Nonmyopia*

Spreading is *myopic* if it proceeds from the trigger *i* to the next vowel to its left, the posttonic, both when it raises the tonic vowels (/e/, /o/, and, vacuously, /i/, /u/ (4a)) and when it cannot (i.e., when the tonic is /a/, /ɛ/, or /ɔ/ (4b)). Spreading is *nonmyopic* if the posttonic raises only if the tonic is affected, as in (4a') and (4c').

The evidence Walker (2010:171) presents for nonmyopia consists of the three cases shown in (5). The spreading in (5a) shows that the process does affect proparoxytones, and the lack of spreading in (5b) shows the nonmyopic effect.

(5) *Grado: Proparoxytones*

- a. éenzen-e ínzin-i 'shin-M.SG/PL'
 zóven-e zúvin-i 'young man-SG/PL'
 b. bodʒánten-i *bodʒántĩn-i 'crab before the last molt-M.PL'

The examples in (5a) show that when both the posttonic vowel and the stressed vowel are undergoers, raising triggered by the final *i* propagates leftward, affecting both vowels. The examples in (5b) show that when the stressed vowel is a nonundergoer (i.e., /a/, /ɛ/, or /ɔ/), raising fails to propagate leftward to the posttonic vowel. It follows, apparently, that in Grado metaphonic raising is nonmyopic.

As previously indicated, for an argument in favor of nonmyopia to be valid, two independent conditions are necessary: (a) raising in proparoxytones does not affect the posttonic when the tonic is /a/, /ɛ/, or /ɔ/; and (b) raising affects both the tonic and the posttonic when the tonic is /e/, /o/, /i/, or /u/ (the last two with vacuous raising). If (a) holds but (b) does not, we would have a situation in which raising affects paroxytones but is blocked in proparoxytones in all cases.

Since Walker (2010) does not indicate whether the three examples in (5) are part of a much larger collection or the only examples found, we should consider both possibilities. If these are the only examples, the evidence is clearly insufficient.⁴ We have a single example of nonmyopic blocking (5b), and only two cases that argue for an active process in proparoxytones (5a). Since, as noted above, one of the necessary conditions for nonmyopia is lack of spreading when the tonic is /a/, /ɛ/, or /ɔ/, the conclusion rests on a single example.⁵

⁴ No other proparoxytones with a final *i* trigger appear in Walker 2005, 2011.

⁵ Proparoxytones are not scarce in these Italo-Romance dialects. Projecting from a check of 10% (127 pages, evenly distributed) of Rosamani's (1990) dictionary, there would seem to be around 2,730 proparoxytones, 560 of them with an /a/, /ɛ/, /ɔ/ tonic, and 430 with an /e/, /o/ tonic.

Evidence for a process based on a single example is clearly problematic, but it is totally insufficient in the case of phonological processes that have exceptions, as is the case for metaphony in Italo-Romance varieties in general (Lindsstrom 1907, Camilli 1929, Cortelazzo 1978, Gaglia 2007, Scorretti 2012), and Grado and Central Veneto in particular (for exceptions in these two dialects, see below and section 3).⁶

We can consider the second option, namely, that the examples in (5) make up a small part of a much larger set in Walker's (2010) sources, thus providing the desired evidence. A careful examination of those sources shows that this is not the case. Not only do we not find evidence for nonmyopia, but there are numerous cases that clearly support myopic spreading. Many sources contain no examples of the relevant proparoxytone structures (structures (4a–c)), but Cortelazzo (1978), Tarlao (1983), Marin (1985, 1999), and Rosamani (1990) add a total of three cases with raising of the posttonic with a tonic /e/, /o/, and three exceptions. The nonmyopic (4c) pattern, however, is clearly disconfirmed in these sources, since there are two cases with no raising of the posttonic when the tonic is /a/, /ɛ/, or /ɔ/ (6b), but thirteen cases of raising (6a).⁷

(6) *Grado: Effect on the posttonic when the tonic is /a/, /ɛ/, /ɔ/*

a. *Raising*

| | | |
|------------|--------------|--|
| álbor-o | álbur-i | 'tree-SG/PL' |
| ánzol-o | ánzul-i | 'angel-SG/PL' |
| árzen-e | árzin-i | '(water) bank-SG/PL' |
| bókol-o | bókul-i | 'flower bud-SG/PL' |
| mámol-o | mámul-i | 'boy-SG/PL' |
| nálbor-o | nálbur-i | 'marble-SG/PL' |
| ɲókol-o | ɲókul-i | 'bump-SG/PL' |
| pápol-o | maɲa-pápul-i | 'tidbit-SG'/nickname (lit. 'tidbit-PL eater') |
| sókol-o | sókul-i | 'clog (shoe)-SG/PL' |
| vansátol-o | vansátul-i | 'leftovers-SG/PL' |
| gógodɔ-o | gógudɔ-i | 'pebble-SG/PL' |
| vénkol-o | vénkul-i | 'nightmare-SG/PL' |
| láse-l-e | lási-l-i | 'leave-2SG.IMP-THEM.F/M' |

b. *No raising*

| | | |
|-------------|-------------|---|
| póver-o | póver-i | 'poor-SG/PL' |
| bodžánten-o | bodžánten-i | 'crab before the last molt- M.SG/PL' |

⁶ A reviewer observes that in order to have evidence for metaphonic alternations, a pair is necessary; this also applies to *bodžánten-i* (5b). Walker (2010) does not give the singular form, but in Cortelazzo 1978:217–219, although none of the consultants who give *bodžánteni* (40 out of 208) also gives the singular, some of them give the singular instead of the plural (3 give *bodžánteno*, 2 *bodžántene*).

⁷ For page numbers in the sources, and additional details, see the online appendix.

Since in Italo-Romance exceptions to metaphony are always common, as indicated above, the few examples like those in (6b) are best explained as lexical exceptions to raising.

This applies to the Grado data taken together. But a more careful examination shows that a distinction must be made. The sources (Cortelazzo 1978, and in particular Francescato 1980 and Tarlao 1983) indicate substantial changes in the speech of Grado brought about by sociological factors around the middle of the 20th century under the heavy influence of the Venetan-Giulian koine and standard Italian. As a result, data from the earlier conservative stage (Ascoli 1898, Battisti 1914, Marin 1985, 1999, Rosamani 1990, Bartoli and Pellis 1995–2011) cannot be mixed freely with those from the later stage (Cortelazzo 1978, Tarlao 1983).⁸ In the earlier stage, we find the clear myopic effects shown by the thirteen examples in the sources, and two exceptions. In the later stage, we find no examples of raising in proparoxytones when both the tonic and the posttonic are mid;⁹ and when the tonic is /a/, /e/, or /o/ and the posttonic is mid, we find one nonmyopic example and two myopic examples. Therefore, while the data from the early part of the 20th century show clear evidence of myopia, the evidence from the latter part, although favoring myopia, is insufficient.

Since additional evidence might set us on a firmer base, I have looked for other possible sources, beyond those in Walker 2005, 2010. Bottin 2003 is an online dictionary based on the speech of older conservative speakers of the 1950s, thus corresponding to a late phase of the earlier stage of Grado. It contains 79 clear cases of myopic raising of the posttonic. The single case in Walker 2010 with nonmyopic nonraising (*bodžánten-i*, (5b)) does undergo raising in Bottin 2003, *bodžánten-o* – *bodžántin-i*. Another source, Jaberg and Jud 1928–1940, gives two myopic examples, *ánzul-i* and *sókul-i* (entries 804, 1569). Finally, the material in Marin 1951, 1964, 1999 confirms the first exception in (6b) and the five cases of myopic raising in (6a), and adds three more cases of myopic raising.¹⁰ These sources strengthen the conclusion that harmony in the earlier stage of Grado is indeed myopic. As for the later stage, the evidence is so limited that it is impossible to draw any conclusion relating to myopia or nonmyopia. We have only *síeli* ‘be-3PL.PRES.SUBJ-them’ (Tarlao 1983: 160) with a tonic vacuous undergoer, and two contradictory examples with a tonic nonundergoer: *bogiàteno* – *bogiàteni* (Cortelazzo 1978:

⁸ Biagio Marin was born in 1891. Ascoli (1898) and Battisti (1914) obviously correspond to the same period. Rosamani gathered his data between 1918 and 1936. The fieldwork for Bartoli and Pellis’s atlas is slightly more recent, 1925–1943.

⁹ Notice that the examples in (5a), *ínzin-i* and *zúvin-i*, correspond to the first stage; although they are from Cortelazzo 1978:14, Cortelazzo is citing Bartoli and Pellis 1995–2011 (see footnote 8).

¹⁰ The three new cases are *sórbol-o* – *sórbul-i* (Marin 1951:288) ‘sorb-SG/PL’, *réfol-o* – *réful-i* (Marin 1964:340/177) ‘gust-SG/PL’, *trabákol-o* – *trabákul-i* (Marin 1964:101/161) ‘small sailboat-SG/PL’.

217–219) without raising and *màbola* – *màmuli* (Cortelazzo 1978: 160–162, Tarlao 1983:160) with raising.

3 Metaphony in Central Veneto

In Central Veneto, a very similar metaphonic process also triggered by a final high *i* raises mid close vowels, while low vowels (/a/, /ɛ/, /ɔ/) are not affected (Zamboni 1974, Rizzi 1989; data from Walker 2010:171).

(7) *Central Veneto: Paroxytones*

- | | | | |
|----|-----------|-----------|-------------------------|
| a. | kals-ét-o | kals-ft-i | ‘sock-M.SG/PL’ |
| | móv-o | múv-i | ‘move-1SG/2SG.PRES.IND’ |
| b. | gát-o | gát-i | ‘cat-M.SG/PL’ |

The examples in Walker 2010:171 that purportedly argue for nonmyopia are the following four alternations:

(8) *Central Veneto: Proparoxytones*

- | | | | | |
|----|----------|----------|-----------|--------------------------|
| a. | órden-o | úrdin-i | | ‘order-1SG/2SG.PRES.IND’ |
| b. | pérseg-o | pérseg-i | *pérsig-i | ‘peach-M.SG/PL’ |
| | ázen-o | ázen-i | *ázin-i | ‘donkey-M.SG/PL’ |
| | ángol-o | ángol-i | *ángul-i | ‘angle-M.SG/PL’ |

These examples appear in Brunelli 2000 and were checked with a native consultant (Rachel Walker, pers. comm.); the consultant reported that “metaphony is more variable in proparoxytonic words.”¹¹ From three examples with tonic /a/, /ɛ/, or /ɔ/ and a single case with a tonic mid vowel, it is difficult to draw any consistent generalization. Recall that, as indicated in section 2, a necessary condition for nonmyopia is raising of the posttonic when the tonic is mid close; the argument therefore rests on a single example, (8a).¹² No other relevant proparoxytones are found in Walker’s sources (Rizzi 1989, Belloni 1991, Maiden 1991, Marcato and Ursini 1998). As for additional sources, the data reported in Jaberg and Jud 1928–1940 favor myopic raising, but are too limited in number to be conclusive; see the online appendix for details.

It is worth noting that in other Italo-Romance dialects with very similar metaphony, spreading is clearly myopic. In Cervara, *kólem-a* – *kúlim-u* ‘very full-F.SG/M.PL’ shows regular spreading; but in *lábber-a* – *lábbir-u* ‘lip-M.PL/SG’, **lábber-u* (Merlo 1922:48), the fact that *á* is not an undergoer does not prevent the internal *e* from raising. The same pattern appears in other dialects: Antrodoco: *félllek-a* – *fillik-i* ‘shake-3SG/2SG.PRES.IND’, but *fkáwtfetr-a* – *fkáwtfír-i* ‘kick out-3SG/2SG.PRES.IND’, **fkáwtfetr-i* (Scorretti 2012:98); Subiaco: *fátfel-e*

¹¹ The available information about the consultant is the following: he “learned the Venetan dialect near the Vicenza/Verona border” (Walker 2005: 922) and was roughly 30 years old (Rachel Walker, pers. comm.).

¹² No other proparoxytones with a final *i* trigger appear in Walker 2005, 2011.

– *fātīl-i* ‘easy-SG/PL’ (Lindsstrom 1907:246); Garfagnana: *álber-o* – *álbir-i* ‘tree-M.SG/PL’ (Venturelli 1979:104); Affile: *árber-o* – *árbir-i* ‘tree-M.SG/PL’ (Schirru 2012:165).

Summing up, the evidence in the sources shows that the older stage of Grado has a myopic system, while for Central Veneto and the more recent stage of Grado the evidence is so scarce and contradictory that we cannot infer either myopia or nonmyopia (see the online appendix for more details). The conclusion is that (1) still holds and that so far there is no support for (2).

4 On the Quality of Data and General Conclusions

From the available evidence, we must conclude that the generalization in (1)—that all attested unbounded spreading processes obey myopia—still holds, and that Romance metaphony, independently of whether it is a bounded or an unbounded process (see footnote 1), is myopic. I have shown that in early 20th-century Grado harmony is myopic, while for Central Veneto and the more recent variety of Grado there is no conclusive evidence in favor of nonmyopic spreading. The theoretical consequences are clear: the fact that (1) still holds means that we want our theory to predict myopic spreading and disallow nonmyopic spreading. How this affects particular proposals, such as those in Walker 2010, 2011 and Kimper 2012, lies outside the focus of this squib.

The previous sections touched on an important topic that deserves a brief discussion: the quality of phonological data. Here I will only briefly discuss some of the conditions that data must meet in order to provide a firm basis for phonological generalizations and ensuing theoretical claims. Two aspects can be distinguished: under what conditions data provide sufficiently good evidence for a given claim, and what information in addition to the data themselves should be reported.

Linguistic generalizations are about a homogeneous speech community; therefore, homogeneity should be controlled, and lack of homogeneity reported and taken into account. Even in the case of data from a single speaker, homogeneity is an issue. A speaker may have different related systems (e.g., a native local system, an interdialectal system, and a related standard language; see discussion of the data from Grado in section 2); influences among these systems should be carefully controlled and adequately reported (see discussion of the data in (8)). In the case of indirect sources (or a combination of indirect and direct sources), both homogeneity of the aggregated data and reliability of individual sources are crucial. Take Cortelazzo 1978 (discussed in section 2), for example. The data are interesting, but they correspond to a mixed population of 35 speakers of very different ages, in a process of linguistic change, and under influences from the interdialectal koine and the official language. Cortelazzo does not indicate the age of individual speakers; elicitation and transcription were done by many different field-workers; and there are indications

(see, e.g., under the entry *inguine*) that often field-workers elicited incorrect answers. In these cases readers must be informed about these circumstances, which affect the reliability of the data.

Another important question is to what extent we can draw a specific generalization from a set of data. Consider a common case of phonological evidence: morph alternations. Assume two acceptable words with a common root, $W1 = [\text{tat-e}]$ and $W2 = [\text{ta}\int\text{-i}]$, and assume that we claim that a palatalization process P derives $[\text{ta}\int\text{-i}]$ from $[\text{tat-i}]$. Reporting the acceptability of $W2$ is not enough. We must also know whether $[\text{tat-i}]$ is acceptable or not, because in the first case we would have an optional process, or we could be facing problematic judgments. Let us now assume that the consultant's judgment is $*[\text{tat-i}]$, $[\text{ta}\int\text{-i}]$, and that the judgment is reliable. We can now ask how many similar alternations are needed to sufficiently support the proposed process. If the process is absolutely exceptionless, one case might in theory represent a large set of cases. But we do not know in advance whether these conditions are true: the single example could be the only one in the lexicon; or it could be an instance of an exceptionless process, an instance of a process with lexical exceptions, or an instance of an allomorphic alternation. As the number of cases increases, we can be more and more confident that the result corresponds to one of the latter three possibilities.¹³ Again, the researcher should give clear information about the number of cases, and justify why they are sufficient to back up a generalization. Quite often a process is posited and then exemplified with some cases, with no further information. The reader does not know whether these exemplifications are the only cases; or, if not, how many cases (approximately) display the process and whether there are exceptions.¹⁴ To cite just one case, examined in de Lacy 2014, Araucanian has been claimed to have a quantity-insensitive iambic metrical system, but careful examination of the sources indicates that the evidence is clearly insufficient to draw the conclusion. Notice also that careful reporting on the consultants, the reliability of the sources, and the nature of the data (number, existence of exceptions, morphological structure, meaning, etc.) is also important because in its absence the process of gathering data is not replicable—and it should be.¹⁵

¹³ Although it seems clear that a single example is insufficient to validate a phonological generalization (it is safe to assume that one example may not be enough for a learner to converge on a grammatical rule that covers only this data point), a fair and important question to ask is how many examples would be sufficient (see de Lacy 2014:155 for some relevant suggestions).

¹⁴ Regarding the crucial data in (8), a reviewer notes that “it is reasonable to assume that a reader of *Linguistic Inquiry* would interpret the four examples as representative of a larger pattern in the language, even if Walker does not say so.” I have shown that there is no evidence that they are.

¹⁵ Difficulty of access to speakers makes these requirements even more important; see Nevins, Pesetsky, and Rodrigues 2009 for the case of Pirahã.

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