

роли сказуемого) он освобождает место, приглашая самого читателя его занять. Как уже сказано, глагол — «сердце», главный член предложения, который соединяет все другие члены, упорядочивая разные отношения между ними. Раз его нет, читатель уже не находится в роли наблюдателя, который может при помощи глаголов обобщать всевозможные ситуации и действия, а оказывается в их центре, где предметы, понятия и явления еще не вступили в четкий порядок: он сделан соавтором стихотворения.

(Все три стихотворения, о которых шла речь в этой небольшой статье, взяты из сборника: Геннадий Айги. *Теперь всегда снега. Стихи разных лет*. Москва 1992.)

Summary: Gennadi Aigi's Verse — Nonsense or Lyrics?

In this paper some characteristic features of Aigi's poetry which are usually regarded as unconventional and troublesome, e.g. the absence of verbs, capital letters and punctuation marks, are briefly discussed with the aim of defining his method of creating meaning. The paper concludes with the assertion that Aigi is giving the reader a new role as co-creator of the poem.

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TORE NESSET

Schwa in Contemporary Standard Russian*

This is a small article on a small topic: the reduced vowel [ə] ("schwa") in Contemporary Standard Russian. However, being at the heart of one of the most complex problem areas of Russian phonology, viz. vowel reduction, schwa certainly deserves thorough inspection. My objective is twofold. First I shall explore a number of generalizations about the distribution of schwa, some of which have not been made explicit in the literature. Secondly I shall sketch an analysis in terms of Optimality Theory (OT, McCarthy and Prince 1993; Prince and Smolensky 1993). To the best of my knowledge, an OT-based analysis of the full range of data explored in the present paper has not been advanced before. My central claims are:

- The distribution of schwa may be described in terms of purely phonological generalizations involving syllable and foot structure as well as assimilation.
- Constraint interaction in terms of OT facilitates an explicit and insightful account of the distribution.

After a discussion of the basic assumptions underlying the analysis in section 1, we turn to a description of the major distributional pattern in terms of foot structure in section 2. The following sections explore three environments where the occurrence of schwa is blocked. Sections 3 and 4 concern assimilation to a preceding soft (palatalized) consonant, in section 5 schwa is related to syllable structure, and in section 6 to assimilation to a following vowel. Section 7 offers a brief summary and conclusion.

1. Basic Assumptions

The segments listed in table 1 serve as a point of departure for the analysis to be proposed in this paper.

*Thanks to Hans-Olav Enger and Lennart Lönngren for comments on an earlier version of this paper.

i	[+high]	[-low]	[-round]
u	[+high]	[-low]	[+round]
e	[-high]	[-low]	[-round]
o	[-high]	[-low]	[+round]
a	[-high]	[+low]	[-round]
ə	---	---	---

Table 1

While this classification is fairly traditional, two points deserve mention. First of all I shall not take into account further phonetic distinctions which have no bearing on the distribution of schwa. For instance, I shall not distinguish between [ʌ] and [a]. Secondly, in the same way as Alderete (1995) I shall assume that schwa is an "empty" vowel in Russian.¹ By "empty vowel" I mean a vowel which does not posit any features for rounding, vowel height and frontness/backness, i.e. a vowel which is neutral with regard to these dimensions. This is at variance with the traditional approach in Russian linguistics where schwa is classified as a mid vowel.

Since Alderete does not compare the two possible analyses of schwa, it may be worthwhile to consider some empirical evidence. Schwa is not attested in stressed syllables. This sets it apart from the indisputably mid vowels /e, o/, which occur in stressed syllables only. If schwa were a true mid vowel, one would expect it to occur exclusively or, at least, predominantly in stressed syllables. However, as this prediction is not borne out, an analysis of schwa as a mid vowel is jeopardized. Analytical problems of this type do not arise if schwa is considered an empty vowel. Since an empty vowel is not able to express any phonemic contrasts, one would expect to find it in contexts unfavourable for such contrasts. Unstressed syllables provide such an environment insofar as they tend to be shorter than stressed syllables (cf. Gabka 1975:108), which makes it more difficult for the hearer to distinguish between different vowels in unstressed syllables. In other words, the analysis of schwa as empty correctly predicts its occurrence in unstressed syllables. An additional argument in favour of this analysis will be provided in section 5.

¹For an in-depth analysis of schwa as an "empty" vowel with reference to other languages, the reader is referred to Oostendorp (2000).

2. Schwa and Foot Structure

The basic facts about the distribution of schwa in Contemporary Standard Russian are well known. Non-high vowels neutralize in unstressed syllables. In the syllable immediately before the stressed syllable (the so-called first pretonic syllable) we have [a] (or – in a narrower transcription – [ʌ]), while schwa is attested elsewhere. This is illustrated in (1):

- (1) a. /golová/ → [gəlavá] 'head (Nom.sg.)'
 b. /gólovu/ → [góləvu] 'head (Acc.sg.)'
 c. /malováto/ → [məlavátə] 'not quite enough'
 d. /málo/ → [málə] 'little, not enough'

Following Alderete (1995) I would like to suggest to account for the exceptional behaviour of the first pretonic syllable in terms of foot structure. If we assume that this syllable is part of an iambic foot as indicated by means of curly brackets in (2), we can state the following simple generalization: non-high vowels are realized as schwa in unfooted syllables.

- (2) a. gə{lavá}
 b. mə{lavá}tə

In order to block reduction to schwa foot internally, I propose the constraint MAX-FEATURE (FOOT):

- (3) MAX-FEATURE (FOOT):

Inside a foot, a feature in the input has a correspondent in the output.

This constraint militates against the occurrence of schwa. Being an empty vowel, schwa posits no features which may correspond to the features of an underlying full vowel. Therefore schwa cannot realize an underlying full vowel without violating MAX-FEATURE (FOOT). Notice, however, that MAX-FEATURE (FOOT) is a positional faithfulness constraint in the sense of Beckman (1997), i.e. a constraint that applies to certain prominent positions only. In our case the relevant position is the foot; the constraint in (3) punishes schwa inside the foot, while schwa is freely admitted in unfooted syllables.

MAX-FEATURE (FOOT) conflicts with the two markedness constraints in (4) and (5) which penalize mid and low vowels, respectively. In addition to general faithfulness in (6), I also assume highly ranked positional faithfulness in (7), which ensures that vowels in stressed syllables do not undergo reduction:

(4) *MID:
Mid vowels are prohibited.

(5) *LOW:
Low vowels are prohibited.

(6) FAITH:
Segments are faithful to the input.

(7) FAITH (HEAD σ):
Vowels in stressed syllables are faithful to the input.

The tableau in table 2 illustrates the interaction of the constraints for /golovój/ 'head (Inst.sg.):'

	/golovój/	FAITH (H σ)	*MID	MAX-F (FT)	*LOW	FAITH
a.	gɛlavój	*!			**	****
b.	gɛlavój	*!		*	*	***
c.	golovój		**!*			
d.	galovój		**!		*	*
e.	gɛlovój		**!	*		*
f.	golovój		**!	*		*
g.	golavój		*	*!	*	**
h.	galavój		*	*!	*	**
i.	gɛlavój		*		**!	**
j.	galavój		*		*	**
k.	gɛlavój		*		*	**

Table 2

As can be seen from the table, candidates a. and b. are suboptimal because they violate FAITH (HEAD σ). Candidates c. through g. evince too many mid vowels, and therefore fail. Schwa in a footed syllable rules out

candidates h. and i. We are left with candidates j. and k., the latter of which is optimal because it has only one low vowel, and thus incurs only one violation mark for *LOW.

3. Schwa and Assimilation after Soft Consonants

Table 2 above demonstrates how constraint interaction allows us to restrict the occurrence of schwa to unfooted syllables. However, there is another restriction that must be encoded in the analysis. Schwa is not found after soft (palatal(ized)) consonants.² The constraints advanced so far would predict /e/ → [ɛ] in the first syllable in (8), but instead we have [i].

(8) /p'erst'en'ók/ → [p'irst'in'ók] 'little finger-ring (Nom.sg.)'

A possible explanation for why [i] is favoured after a soft consonant is assimilation. The palatal place of articulation assimilates from a soft consonant to a following unstressed vowel. Lombardi (1999) proposes to account for assimilation in terms of the constraint family AGREE. For the purposes of this paper I shall assume the following member of this family.³

(9) ONSET-HEAD AGREE:

A soft consonant in the onset is followed by a high, front vowel in the syllable head.

This constraint must be ranked below FAITH (HEAD σ), because otherwise we get assimilation in stressed syllables as well. The interaction of the relevant constraints are shown in table 3. Candidate a. which shows assimilation in the stressed syllable, violates FAITH (HEAD σ) and is therefore suboptimal. In unstressed syllables, however, assimilation is required as shown by a comparison of candidate b. with candidates c. through e. Candidates c., d. and e. fail because they incur too many violations for ONSET-HEAD AGREE.

²There is one exception to this generalization to which we turn in section 4.

³Notice that Lombardi suggests to derive the directionality of assimilation from positional faithfulness. In order to avoid unnecessary complications I have instead encoded the direction in ONSET-HEAD AGREE.

/p'ɛrst'en'ók/	FAITH (H σ)	O-H AGR	*MID	MAX-F (FT)	*LOW	FAITH
a. p'ɛrst'in'ík	*!					***
b. p'ɛrst'in'ók		*	*			**
c. p'ɛrst'an'ók		**!	*		*	**
d. p'ɛrst'in'ók		**!	*			**
e. p'ɛrst'en'ók		**!	*	*		**

Table 3

4. Schwa after Soft Consonants in Word Final Syllables

In the previous section we saw that schwa is blocked after soft consonants. However, while this generalization holds for pretonic syllables, in syllables following the stressed syllable schwa is attested along with [i]. The examples in (10) from Avanesov (1984:99 and 101) illustrate this:

- (10) a. /mor'a/ → [mór'ə] 'sea (Gen.sg.)'
 b. /mor'é/ → [mór'i] 'sea (Loc.sg.)'

Avanesov seems to base his analysis on two assumptions:

- (11) a. The environments in which schwa occurs, must be listed.
 b. Morphosyntactic features are relevant for the distribution of schwa.

The relevance of listed, morphological environments has aroused some controversy in Russian linguistics (cf. e.g. Thelin 1971:93ff. for extensive discussion with references to the literature). It seems to me that both assumptions in (11) are problematic, and that Avanesov's data are compatible with an analysis which does not refer to extensive, arbitrary lists of grammatical endings. Let us start by looking at a list of morphological environments which according to Avanesov (1984:98ff. and 200ff.) favour pronunciation of schwa in unstressed syllable:⁴

⁴In (12) and (13) I ignore conservative variants and pronunciations restricted to careful speech in cases where Avanesov indicates alternative pronunciations.

- (12) a. Nom.sg. (2. decl. nouns): [bán'ə] ~ [z'íml'á] 'bath-house' ~ 'earth'
 b. Gen.sg. (1. decl. nouns): [sl'ésər'ə] ~ [sləvar'á] 'locksmith' ~ 'dictionary'
 c. Nom. pl. (nouns): [l'íst'jə] ~ [z'it'já] 'leaf' ~ 'son-in-law'
 d. Dat.pl. (nouns): [kápl'əm] ~ [sləvar'ám] 'drop' ~ 'dictionary'
 e. Loc.pl. (nouns): [kápl'əx] ~ [sləvar'áx] 'drop' ~ 'dictionary'
 f. Nom.sg. (3. decl. neut.): [ím'ə] ~ [d'it'á] 'name' ~ 'child'
 g. 3.pl.pres. (2. conj. verbs): [nós'ət] ~ [gəvar'át] 'carry' ~ 'speak'
 h. Imperfective gerund: [znájə] ~ [gəvar'á] 'know' ~ 'speak'
 i. Nom.sg.fem. (adj.): [dóbrəjə] 'good'
 j. Nom.sg.neut. (adj.): [dóbrəjə] 'good'
 k. Isolated examples: [s'ivódn'ə] 'today'

The data in (12) suggest that whenever schwa alternates with a stressed vowel, the stressed alternant is [a]. Examples (12i-k) where no alternation is attested are not at variance with this generalization. Consider now the list in (13) which includes the environments that according to Avanesov (1984:100ff.) favour [i].⁵

⁵Notice that Avanesov (1956, 1984) distinguishes between two i-like sounds in post-tonic syllables. However, since according to Avanesov (1956:125) the distinction is only maintained in careful speech ("otčétlivoe, žekannoje proiznošenie"), and since the focus of the present paper is schwa, the distinction will be ignored in the following.

- (13) a. Gen.pl. (nouns): [sas'éd'ij] ~ [kan'ěj] 'neighbour' ~ 'horse'
 b. Inst.sg. (2. decl. nouns): [káp'l'ij] ~ [z'iml'ój] 'drop' ~ 'earth'
 c. Loc.sg. (1. decl. nouns): [mór'i] ~ [sləvar'ėj] 'sea' ~ 'dictionary'
 d. Nom.pl. (nouns in *-anin*):⁶ [kr'ist'án'ij] 'peasant'
 e. Inst.sg. (1. decl. nouns): [uč'it'il'im] ~ [kan'óm] 'teacher' ~ 'horse'
 f. Gen.pl. (nouns): [brát'jif] ~ [z'it'jóf] 'brother' ~ 'son-in-law'
 g. Nom.sg. (1. decl. neut. nouns): [mór'i] ~ [žn'iv'jó] 'sea' ~ 'stubble-field'
 h. Comparative (adjectives): [s'il'n'ėj] 'strong'
 i. Gen.sg.masc./neut. (adj.): [s'in'ive] ~ [bal'šova] 'blue' ~ 'big'
 j. Dat.sg.masc./neut. (adj.): [s'in'imu] ~ [bal'šomu] 'blue' ~ 'big'
 k. Loc.sg.masc./neut. (adj.): [s'in'im] ~ [bal'šóm] 'blue' ~ 'big'
 l. Dat.sg. (2. decl. nouns): [rabót'ij] ~ [z'iml'ėj] 'work' ~ 'earth'
 m. Loc. sg. (2. decl. nouns): [rabót'ij] ~ [z'iml'ėj] 'work' ~ 'earth'
 n. Comparative in *-e* (adj.): [d'išévl'i] 'cheap'
 o. Comparative in *-ej* (adj.): [kras'iv'ij] ~ [s'il'n'ėj] 'pretty' ~ 'strong'

⁶Despite the orthographic *-e*, it is possible that the Nom.pl. ending in these examples is /i/, which is the most widespread ending for masculine nouns in the first declension. If the ending is analysed as /i/, the occurrence of [i] in unstressed syllable is trivial, and the nouns in *-anin* could be removed from (13).

- p. 2.sg.pres. (1. conj. verbs): [l'éz'iš] ~ [n'is'ós] 'climb' ~ 'carry'
 q. 3.sg.pres. (1. conj. verbs): [l'éz'it] ~ [n'is'ót] 'climb' ~ 'carry'
 r. 1.pl.pres. (1. conj. verbs): [l'éz'im] ~ [n'is'óm] 'climb' ~ 'carry'
 s. 2.pl.pres. (1. conj. verbs): [l'éz'it'i] ~ [n'is'ót'i] 'climb' ~ 'carry'
 t. 2.pl.pres./imp.pl. (verbs): [gəvar'ít'i] 'speak'
 u. Inst.pl. (nouns): [káp'l'im'ij] ~ [sləvar'ám'ij] 'drop' ~ 'dictionary'

With the exception of (13u) to which we return below, these data indicate that [i] alternates with the mid vowels [ó] or [é], i.e. that /o, e/ are realized as [i]. Taken together, (12) and (13) suggest that the exceptional schwa after a soft consonant is a realization of /a/, but not of /o, e/. In other words, we may write the following simple rule:

(14) /a/ → [ə]

At this point two questions arise. First, we must ask how we can account for the examples where no alternation with a stressed vowel can be assumed. As in such cases we have no empirical arguments for postulating a mid or low vowel phoneme, it is difficult to relate them to the rule in (14). The simplest description is obtained if we assume an underlying low vowel in the problematic cases in (12) and a mid vowel in (13), since this gives us no exceptions to the rule in (14). Admittedly, there is no independent empirical evidence for this analysis. However, given that there is no counterevidence either, the choice of the simplest analysis seems justified.

The second question concerns the domain of the rule in (14). Is it conditioned by morphosyntactic features as implied in Avanesov's analysis? At least two arguments jeopardize this hypothesis. First, as shown in (12k), schwa is attested in adverbs like *segodnja* 'today'. Although the final vowel historically derives from an inflectional ending, it seems far-fetched to analyse this as inflection in Contemporary Standard Russian. Secondly, Avanesov (1984:98f.) himself admits that schwa is also

attested in non-inflected environments side by side with [i]. Thus, as Avanesov's own data indicate that schwa is not restricted to inflectional endings, the hypothesis that (14) is morphologically conditioned can be abandoned.

Given the irrelevance of morphosyntactic features, we must seek to delimit the domain of (14) in phonological terms. According to Avanesov (1984:98f.), schwa in non-inflectional environments is restricted to the word final syllable. Since inflectional suffixes tend to be monosyllabic and word final, this domain allows us to account for the occurrence of schwa in inflectional endings as well. Moreover, if (14) is restricted to final syllables we are in a position to accommodate the apparently problematic instrumental plural of nouns. As can be seen from (13u), the relevant vowel here is in the penultimate syllable. If (14) applies to final syllables only, our analysis does not predict [a] → [ə] in this case. On the basis of detailed phonetic investigations Thelin (1971) has shown that schwa is most consistently pronounced in open syllables. However, according to Avanesov (1984:99) schwa is also obligatory in some forms where the relevant syllable is closed, e.g. in (12d) and (12e). Therefore I shall not include open syllables in the revised rule in (14') where I take final syllables to be the domain in which schwa is pronounced:

(14') In final, unstressed syllable:⁷

/a/ → [ə]

How can the generalization in (14') be accommodated in an OT analysis? What we need is a constraint that blocks the realization of /a/ as [i] in word final position. To this end I propose the following member of the IDENT constraint family:

(15) IDENT[+low] σ_w:

In a word-final syllable, mapping of [+low] in the input to [-low] in the output is prohibited.

⁷Notice that although the focus in this section is on schwa after soft consonants, it is not necessary to refer to soft consonants in the rule, since according to the basic pattern explored in section 2, in unfooted syllables schwa is found after hard consonants as well.

This constraint penalizes the realization of underlying [+low] vowels as [-low].⁸ Tables 4 and 5 illustrate the effect of IDENT[+low] σ_w for two different present tense forms of *nosit* 'carry'. In the 3. plural in table 4 the constraint incurs a violation mark for candidate c., because [i] is not allowed to correspond to /a/. In table 5, on the other hand, no violation is incurred, because in the 3. *singular* we have /o/ instead of /a/ in the input. The constraint does not punish the correspondence between [i] and the mid vowel /o/. Notice that FAITH (H σ) and MAX-F (FT) are not included in tables 4 and 5, since the present discussion focuses on unfooted syllables.

	/nós'at/	ID[+lo] σ _w	O-H AGR	*MID	*LOW	FAITH
a.	nós'at		*	*	*!	
b.	ɛɛ'at		*	*		*
c.	nós'it	*!		*		*

Table 4

	/nós'ot/	ID[+lo] σ _w	O-H AGR	*MID	*LOW	FAITH
a.	nós'at		*!	*	*	*
b.	nós'ət		*!	*	*	*
c.	ɛɛ'it			*		*

Table 5

5. Schwa and Syllable Structure: Minimality

A well-known restriction on the distribution of schwa is its inability to occur in word initial position. Thus, while in (16a) [ə] is found in the unfooted syllable, [a] occurs in (16b), where the clitic preposition is removed and the vowel therefore occurs word initially. It seems that schwa is impossible not only in word initial position, but in all vowel initial syllables, although standard descriptions are less explicit about this. However, according to both Jones and Ward (1969:51f.) and Gabka (1975:117) [a] (in a narrower transcription: [ʌ]), not [ə], is pronounced

⁸Notice that I assume that realization of /a/ as schwa is not at variance with the constraint. While the constraint states that a [+low] vowel in the input is not allowed to correspond to a [-low] vowel in the output, it does not militate against an empty vowel which has no feature [low] at all.

after another vowel in unstressed position (see also Avanesov 1984:106ff.). For instance, in (16c) the boldfaced vowel is realized as [a], not schwa.

- (16) a. Cə: *v oborót* 'into circulation (Acc.sg.)'
 b. ##a: *oborót* 'turn, circulation' (Nom/Acc.sg.)
 c. Va: *naoborót* 'on the contrary (adverb)'

The data in (16) suggest that the correct descriptive generalization is that schwa does not occur in syllable initial position, i.e. that schwa is blocked in syllables which lack an onset. This, I would like to suggest, may be understood in terms of a minimality requirement for Russian syllables. As a minimum a Russian syllable must contain either a full vowel or an onset. If neither condition is met, the syllable is ill-formed. In order to account for this I propose the following constraint:

(17) MINIMALITY:

Syllables with neither a full vowel nor an onset are prohibited.

The effect of this constraint is illustrated in the tableau in table 6. For simplicity, I have not included constraints of no direct relevance for the point being made here.

	/oborót/	MINIMALITY	*LOW	FAITH
a.	əbarót		**	*
b.	ə o barót	*!	*	*

Table 6

It is interesting to notice that this approach lends support to the analysis of schwa as an empty vowel. Since under the proposed analysis a string əC₀ not only lacks phonological features in the onset, but also in the syllable head, it does not contain sufficient material to be parsed as a syllable. If we, on the other hand, considered schwa a full-fledged mid vowel on a par with /o, e/, we would not be in a position to explain why schwa cannot occur in onsetless syllables. In other words, the analysis of schwa as an empty vowel allows us to capture a generalization which would otherwise have been lost.

6. Schwa and Assimilation to a Following Vowel

A final restriction which has not received much attention in the literature, concerns vowels followed by another vowel. The data in (18) from Avanesov (1984:107 and 109) are illustrative.

- (18) a. /o, a/ → [a] / _ /o/: *pooperírovati* 'operate (past.pl.)',
naoborót 'on the contrary'
 b. /o, a/ → [ə] / _ /i/: *poigrát* 'play (inf.)',
zaigrát 'begin to play (inf.)'
 c. /o, a/ → [ə] / _ /u/: *poubiráli* 'clean up (past.pl.)',
pauká 'spider (Gen.sg.)'

Although Avanesov does not provide data for all possible combinations of vowels, the data are compatible with the following generalization:

- (19) A non-high vowel is realized as [a] before another non-high vowel.

This generalization may be interpreted as an example of regressive assimilation since a [-high] vowel requires the same feature specification in the preceding vowel. In section 3 we saw that feature agreement may be accounted for in terms of the constraint family AGREE. I would like to suggest to capture the generalization in (19) by means of the following member of this family:

- (20) HEAD-HEAD AGREE[-high]:

In a sequence of two immediately adjacent syllable heads, the first member is [-high] if the second member is [-high].

The tableaux in tables 7 and 8 illustrate the interaction of HEAD-HEAD AGREE[-high] with *MID and *LOW. In table 7 candidate a. violates HEAD-HEAD AGREE[-high] because the first vowel is followed by a [-high] vowel. Therefore candidate a. fails in table 7, but not in table 8 where schwa is followed by a [+high] vowel. In both tableaux candidate c. is suboptimal due to violations of *MID. In order to avoid irrelevant complications constraints with no bearing on the argument are not included in the tableaux.

/naoborót/	H-H AGR[-hij]	*MID	*LOW	FAITH
a. neabarót	*!	*	**	***
b. na abarót		*	***	**
c. noabarót		**!	**	***

Table 7

/pauká/	H-H AGR[-hij]	*MID	*LOW	FAITH
a. pa uká			*	*
b. pauká			**!	
c. pouká		*!	*	*

Table 8

7. Summary and Conclusion

In this paper I have explored the distribution of [ə] in Contemporary Standard Russian. The generalizations we have arrived at are summarized in (21). For clarity one example is given for each point. In the examples the relevant vowels are given in boldface.

- (21) a. Non-high vowels are realized as [ə] in unfooted syllables.
 b. Occurrence of [ə] is blocked:
- i. after soft consonants (p'irst'in'ók) ([p'irst'in'ók])
 (Exception: /a/ → [ə] in word final syllable), ([bán'ə])
 - ii. in onsetless syllables, and ([naabarót])
 - iii. immediately before a non-high vowel. ([naabarót])

Not all these generalizations have received due attention in the literature. In particular this holds for (21b.i-iii).

In conclusion, I would like to highlight two points. First, the proposed analysis shows that the distribution of schwa is subject to purely phonological generalizations involving syllable and foot structure as well as assimilation. Strong evidence is therefore provided against approaches invoking extensive, arbitrary lists of morphological environments. Secondly, the analysis demonstrates that an explicit and insightful account of the generalizations may be given in OT.

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