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NASAL VOWELS IN KURPIAN

SAMOGŁOSKI NOSOWE W DIALEKCIE KURPIOWSKIM

Kurpian is a dialect of Polish spoken in northern Mazovia. The administrative capital is Ostrołęka but that is not where Kurpian is spoken. Kurpian is used as a native language in villages, but even there, it is limited to the older generation (more than 70 years old). Therefore, it is fair to say that Kurpian is an endangered dialect that is on the verge of extinction.

In the communist Poland (1945–1989), the government conducted an educational campaign to eradicate Kurpian that was regarded as an incorrect and corrupt version of Polish. Standard Polish was enforced in schools by teachers and educators, who, in large numbers, were recruited from outside Kurpia. Children were punished and ridiculed when they spoke Kurpian at school. Kurpian was purged from all public institutions. This policy of oppression and stigmatization, sadly, bore fruit and the dialect started disappearing. The democratic Poland that rose after the fall of the communist system in 1989 stopped oppressing Kurpian, but the damage done earlier is extremely hard to repair.

The danger that Kurpian may totally disappear within a generation has been understood by many Kurpians. Much is being done in order to avert this danger. Regional and local cultural organizations and regional activists, notably Tadeusz Grec, Henryk Gadomski and Mirosław Grzyb, engage in an effort to propagate and teach Kurpian. *Związek Kurpiów* 'Kurpian Union', led by Mirosław Grzyb, publishes work in Kurpian, runs courses for teachers and promotes the organization of language competitions. Many similar competitions are organized at the local level by schools and various cultural associations.

The revitalization effort was boosted by the introduction of the writing system for Kurpian in 2009[1]. Prior to 2009, Kurpian was spoken, but not written. The orthographic system devised especially for Kurpian was embraced with great enthusiasm. Since 2009, close to 2000 pages of various texts written in Kurpian by Kurpians have been published. Among the books that have been published are

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[1] J. Rubach, *Zasady pisowni kurpiowskiego dialektu literackiego*. Związek Kurpiów i Muzeum Kultury Kurpiowskiej, Ostrołęka 2009.

a dictionary, *Słownik wybranych nazw i wyrażeń kurpiowskich*[2] and a textbook that is now used to teach Kurpian at school: *Móźë jï pśïsë po kurpśosku*[3].

Preservation of Kurpian is important not only for Kurpians themselves. It is important for Standard Polish and its linguistic culture. Kurpian, better than any other dialect of Polish, has retained the vocalic system that Polish used to have hundreds of years ago. Consequently, Kurpian is a particularly valuable source for reconstructing the historical development of Polish. This paper makes this point from the perspective of nasal vowels[4].

Section 1 provides a general background and the orthographic conventions. Section 2 looks at nasal vowels from a historical perspective, showing how generative phonology predicts the development of schwa and the tense nasal [õ] in Kurpian. Section 3 analyzes Nasal Shift and Nasal Decomposition in terms of Derivational Optimality Theory. Section 4 summarizes the conclusions.

Background

Kurpian has a rich system of vowels[5]:

(1) Kurpian vowels
Oral vowelsuNasal vowels:
ɨ
eoɔ̃õ
ɛəɔ
aɑ

These vowels as well as their orthographic representations are illustrated by the following examples.

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(2) [ɪ], spelled *ï*, – a high lax front vowel, as in *bźïć* 'beat'

[ɨ], spelled *y*, – a high lax central vowel, as in *być* 'be'

[u], spelled *u*, – a high tense back rounded vowel, as in *buk* 'beech'

[e], spelled *é*, – a mid tense front vowel, as in *chléw* 'pigsty'

[o], spelled *ó*, – a mid tense back rounded vowel, as in *król* 'king'

[ɛ], spelled *e*, – a mid lax front vowel, *desc* 'rain'

[ə], spelled *ë*, – schwa, a mid lax central vowel, as in *śë* 'self'

[ɔ], spelled *o*, – a mid lax back rounded vowel, as in *rok* 'year'

[a], spelled *a*, – a low lax central vowel, as in *cas* 'time'

[ɑ], spelled *å*, – a low tense back vowel, as in *ptåk* 'bird'

[ə̃], spelled *ę̈*, – nasal schwa, a mid lax central nasal vowel, as in *cę̈sto* 'often'

[õ], spelled *ą*, – a mid tense back nasal vowel, as in *wąsy* 'moustache'

In terms of distinctive features, Kurpian vowels are represented as follows. Let me note that central vowels are characterized as [+back], a standard characterization in generative phonology.

(3) Kurpian vowels

	ɪ	ɨ	u	e	o	õ	ɛ	ə	ə̃	ɔ	a	ɑ
high	+	+	+	-	-	-	-	-	-	-	-	-
low	-	-	-	-	-	-	-	-	-	-	+	+
back	-	+	+	-	+	+	-	+	+	+	+	+
tense	-	-	+	+	+	+	-	-	-	-	-	+
round	-	-	+	-	+	+	-	-	-	+	-	-
nasal	-	-	-	-	-	+	-	-	+	-	-	-

Consonants are not the focus of this paper, so let me merely note two points. First, Kurpian exhibits Mazovian Sibilation (*mazurzenie*), whereby [š ž č dž] are replaced with [s z c dz][6]. Second, *ś, ź ć dź, ń* representing prepalatals [ɕ ʑ tɕ dʑ ɲ] are always written with an accent, never as *si, zi, ci, dzi, ni* as in Standard Polish, so *sieć* 'net', *zima* 'winter', *ciało* 'body', *dziwny* 'strange', and *niebo* 'sky' are written *śeć, źïma, ćało, dźïwny,* and *ńebo*.

A Historical Perspective

This section investigates the historical origin of the nasal vowels [ə̃], spelled *ę̈*, and [õ], spelled *ą*, and their phonological status in modern Kurpian.

Historical grammarians are in agreement that Old Polish used length contrastively, and all vowels except *jers* appeared either as short or as long without a difference in quality[7]. Sidestepping nasal vowels for the moment, the vocalic system was as follows.

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[6] Vide: J. Rubach (*Zasady pisowni kurpiowskiego…*) for discussion.

[7] Z. Stieber, *Rozwój fonologiczny języka polskiego*. PWN, Warszawa 1952; Idem**,** *A Historical Phonology of the Polish Language*. Carl Winter, Heidelberg 1973;

(4) Old Polish vowels
i iːɨ ɨːu uː
ɛ ɛːɔ ɔː
æ[8] æːa aː

Throughout most of the Old Polish period the corresponding short/long vowels did not differ in quality. According to Stieber[9], who conducted philological research, the system changed in the 15th c. because long vowels became tense. This change of quality is entirely natural because long vowels are typically [+tense], a situation that we find, for example, in German.

(5) Polish vowels in the 15th c.[10]
i iːu uː
eːoː
ɛɔ
a ɑː

The loss of length at the turn of the 15th/16th c. resulted in the following system.

(6) Polish vowels in the early 16th c.
iu
eo
ɛɔ
a ɑ

Notice that the system in (6) is strikingly similar to that of modern Kurpian[11]. What stands out as a difference is the occurrence of schwa in Kurpian, but not in Standard Polish, an issue that I discuss later.

Nasal vowels paralleled oral vowels, so in the 14th c. they did not differ in quality but only in length. In the 15th c., a quality difference developed, whereby the long vowel became tense while the short vowel remained lax[12]. The loss of

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S. Rospond, *Gramatyka historyczna języka polskiego*. PWN, Warszawa 1973; Z. Klemensiewicz, *Historia języka polskiego*. PWN, Warszawa 1974.

[8] This is the so-called *jat'* vowel transcribed in the Slavic tradition as [ě]. It merged with [ɛ] later in Old Polish.

[9] Z. Stieber, *Rozwój fonologiczny*…; Idem, *A Historical Phonology*…

[10] Stieber regarded [ɨ] as an allophone of /i/, so /ɨ/ is missing in (5) and below, ibidem.

[11] J. Rubach (*Liquid Lowering in Kurpian*. Journal of Linguistics, Vol. 54 [in press]) argues that the high lax vowels in Kurpian occur in the surface representation but not at the underlying level. They are derived by a context-free rule that he calls Laxing: $i\ ɨ \rightarrow ɪ\ ɪ$.

[12] Z. Stieber, *Rozwój fonologiczny*…; Idem, *A Historical Phonology*…

length at the turn of the 15th/16th c. resulted in two nasal vowels differing only in [±tense].

(7) Nasal vowels in Polish
14th c.15th c.16th c.
ã ã:ã ɑ̃:ã ɑ̃

Nasal [ã ɑ̃] evolved further in the 16th c., but, according to Stieber (1973), the timeline for each vowel was different: the lax [ã] changed to [ɛ̃] at the beginning of the 16th c. while the tense [ɑ̃] lingered on for another hundred years, yielding a mid rounded vowel at the end of the 16th c., ã → õ. Neither Stieber[13] nor any other grammarian specifies the quality of the nasal õ, so we do not know if the nasal vowel was tense or lax, that is, whether it was [õ] or [ɔ̃]. In today's Standard Polish, the back nasal is lax, as in *wąs* 'moustache' pronounced [vɔ̃w̃s], with a nasal diphthong[14], so the grammarians probably assumed that the 16th c. change was ã → ɔ̃ rather than ã → õ.

As I point out below, generative phonology with its distinctive features and rigorous methods of formal analysis gives a different answer to the question of whether the nasal that developed from ã was lax or tense. In what follows, I assume the framework of Optimality Theory[15] and the Halle-Sagey model of distinctive features[16].

The raising of nasal vowels from low to mid is a natural process that is well-supported typologically. We see it in action in modern American English dialect, here the low nasal [æ̃] raises to a mid vowel in words such as *can't* and *ham*. Let us now consider what must have happened in the 16th c. when the low lax [ã] underwent Raising. In addition to being [+nasal], [ã] is [+low, -high, +back, -tense]. The most natural default path of raising to a mid vowel takes [ã] directly to nasal schwa [ɔ̃], because schwa preserves all the features of the input [ã] except

[13] Ibidem.

[14] L. Biedrzycki, *Fonologiczna interpretacja polskich głosek nosowych*. Biuletyn Polskiego Towarzystwa Językoznawczego 1963, No. 22, pp. 23–45.

[15] A. Prince and P. Smolensky, *Optimality Theory: Constraint Interaction in Generative Grammar*. Blackwell, Oxford 2004 [Revision of 1993 technical report, Rutgers University Center for Cognitive Sciences. Available on Rutgers Optimality Archive, ROA–537]; J. McCarthy and A. Prince, *Faithfulness and reduplicative identity*. University of Massachusetts Occasional Papers in Linguistics 1995, Vol. 18. Eds. J. Beckman, L. Dickey and S. Urbanczyk. Graduate Linguistic Student Association Publications, Amherst, Massachusetts, pp. 249–384; OT, henceforth.

[16] M. Halle, *Phonological features*, [In:] *International Encyclopedia of Linguistics*. Ed. W. Bright. Oxford University Press, Oxford 1992, pp. 207–212; E. Sagey, *The Representation of Features and Relations in Non-linear Phonology*. Ph.D. dissertation, MIT, Cambridge, Massachusetts 1986. On the use of the feature [±tense], vide: S.A.J. Wood (*Tense and lax vowels – degree of constriction or pharyngeal volume?* Working Papers in Linguistics (Lund University) 1975, Vol. 1, pp. 109–134).

[+low] that is prohibited by Raising: [ɔ̃] is [-high, +back, -tense]. The change [ã] →
[ɔ̃] is exactly what the feature system predicts as the least costly (most optimal)
way of accommodating the effect of Raising. OT with its mechanism of selecting
the most optimal output that diverges minimally from the input is a particularly
adequate framework for an analysis of the //ã// → [ɔ̃] change[17].

The driver for Raising is the segment inventory constraint banning [ã]. The
choice of [ɔ̃] as the optimal output is guided by faithfulness IDENT constraints.

(8) IDENT[±low]: The value of [±low] on the input vowel must be preserved on a
correspondent of that vowel in the output.
IDENT[±back]: The value of [±back] on the input vowel must be preserved on a
correspondent of that vowel in the output.
IDENT[±round]: The value of [±round] on the input vowel must be preserved on
a correspondent of that vowel in the output.
IDENT[±high]: The value of [±high] on the input vowel must be preserved on a
correspondent of that vowel in the output.
IDENT[±tense]: The value of [±tense] on the input vowel must be preserved on a
correspondent of that vowel in the output.

The word *gęsty* 'thick' illustrates the interaction of the constraints at the point
of transition from a low to a mid vowel at the beginning of the 16th c. The arrow
→ denotes the winning candidate.

(9)//gãstɨ// → [gɔ̃stɨ]

	*ã	ID[±tense]	ID[±high]	ID[±back]	ID[±round]	ID[±low]
(a) gãstɨ	*!					
→ (b) gɔ̃stɨ						*
(c) gɔ̃stɨ					*!	*
(d) gõstɨ		*!			*	*
(e) gẽstɨ		*!		*		*
(f) gɛ̃stɨ				*		*
(f) gũstɨ		*!	*			*

To obtain [gɔ̃stɨ], IDENT[±low] must be outranked by the other constraints.
The 16th c. [ɔ̃] in [gɔ̃stɨ] is exactly what we find in Kurpian today. Standard
Polish changed [ã] into [ɛ̃], which is a more complicated change than the one in the
winning output in (9). To obtain the Standard Polish, //ã// → [ɛ̃], we need to
employ *ə (don't be schwa) and rank it above IDENT[±back]. The question is
whether the Standard dialect implemented Raising by //ã// → [ɛ̃]. Given our
analysis and the naturalness of the //ã// → [ɔ̃] change, it might be hypothesized that

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[17] I use double slashes for underlying representations, single slashes for intermediate
representations and square brackets for surface forms.

Standard Polish, like Kurpian, had the //ã// → [ɔ̃] rule and a later change fronted the vowel in Standard Polish, ɔ̃ → ɛ̃, but not in Kurpian.

As noted earlier, the 15th c. tense nasal [ɑ̃] remained unchanged throughout the 16ᵗʰ c. Raising affected //ã// at the turn of the 16th/17th c. The driver for Raising must have been the segment inventory constraint prohibiting [ɑ̃], which is illustrated by the evaluation of *wąs* 'moustache'.

(10) //vɑ̃s// → [võs]

	*ɑ̃	ID[±tense]	ID[±high]	ID[±back]	ID[±low]	ID[±round]
(a) vɑ̃s	*!					
→ (b) võs					*	*
(c) vɔ̃s		*!			*	*
(d) vɒ̃s		*!			*	
(e) vẽs				*!	*	
(f) vɛ̃s		*!		*	*	
(f) vũs			*!		*	*

The grammar in 1600 is much like the grammar in 1500 shown in (9), but there is an important change: IDENT[±round] that was undominated in 1500 and prohibited //ã// → [ɔ̃] is now reranked to a low position, so the system selects a rounded vowel as the optimal output from //ã//. Notice that the vowel must be [+tense], so [õ] rather than [ɔ̃], because IDENT[±tense] mandates the preservation of tenseness in the output. The 1600 pronunciation [võs] is exactly what we find in Kurpian today.

The fact that [õ] rather than [ɔ̃] is the optimal output from //ã// raises the question of whether [ɑ̃] → [õ] was a change specific to Kurpian or whether it was a general change that included Standard Polish. It may very well be the case that the back nasal in Standard Polish was [õ], like it is in Kurpian today, and it changed to [ɔ̃] later when tense [o] disappeared from Standard Polish in the 19th c.

To conclude, Kurpian nasal schwa [ɔ̃] and nasal tense [õ] come historically from lax [ã] and tense [ɑ̃], respectively. The change was effected by Raising, a typical process in nasal vowels.

In modern Kurpian [ɔ̃] and [õ] can be illustrated by the following examples.

(11) ńęso [ɲɔ̃sɔ] 'meat' kąsać [kõsatɕ] 'bite'
często [ʧɔ̃stɔ] 'often' zdążéć [zdõʑetɕ] 'manage'
scęśće [sʧɔ̃ɕtɕɛ] 'luck' wąchać [võxatɕ] 'smell'

Before stops, nasal vowels are decomposed, a point that I discuss in the next section.

Given the data in (11), the phonemic status of [ɔ̃ õ] as underlying //ɔ̃ õ// is not in question. It is also clear that the oral correspondent of //õ// – tense //o// – is an underlying segment. As noted earlier [o] is contrastive and occurs in unpredictable

contexts, for example, *córka* 'daughter', *bóty* 'shoes' and *śïgórka* 'figure'. Less clear is the situation of oral schwa.

Oral schwa occurs regularly at the end of the word.

(12) Kurpian oral schwa at the end of the word
nog+ë [nɔgə] 'leg' (acc.sg.) ńos+ë [ɲɔsə] 'I carry'
jïńë [jɨɲə] 'name' śë [ɕə] 'self'

The final [ə] corresponds to the earlier [ɜ̃] in Kurpian and [ã] in Old Polish. In Standard Polish, the corresponding vowel is [ɛ̃]. The oral quality of schwa in (12) must therefore be an effect of Denasalization.

Denasalization at the end of the word is a natural process. We find it applying in Standard Polish, albeit optionally.

(13) Standard Polish oral [ɛ] at the end of the word
nog+ę [nɔgɛ̃] or [nɔgɛ] 'leg' (acc.sg.) nios+ę [ɲɔsɛ̃] or [ɲɔsɛ] 'I carry'
imię [imʲjɛ̃] or [imʲjɛ] 'name' się [ɕɛ̃] or [ɕɛ] 'self'

Kurpian is different from Standard Polish in two ways. First, Denasalization affected both vowels, not just one. Second, the process was obligatory. Schematically:

(14) Kurpian Denasalization
$V_{[+nasal]} \rightarrow [-nasal] \: / \: \text{—} \: \#$

Denasalization (14) predicts that at the end of the word Kurpian must have not only oral schwa but also oral [o] instead of [õ]. The prediction is correct.

(15) nog+ó [nɔgo] 'leg' (instr.sg.)
ńosó [ɲɔso] 'they carry'
só [so] 'are'

There is a minimal pair showing a contrast between lax [ɔ] and tense [o]: drog+o [drɔgɔ] 'expensively' – drog+ó [drɔgo] 'road' (instr.sg.).

Denasalization is a historical rule of Kurpian. Today it would be hard to claim that Kurpian has nasal vowels word-finally and an active process of Denasalization. Given that, final oral schwa is unpredictable and cannot be derived from //ɜ̃// any more. I conclude that oral schwa is an underlying segment in Kurpian.

Nasal shift and nasal decomposition

The contention that Kurpian has underlying nasal vowels is strengthened by an analysis of what I term Nasal Shift. A class of lexically specified nasal vowel roots

exhibit alternations between [ɔ̃] and [õ], as the following examples illustrate. Dots mark syllable boundaries.

(16) *nom.pl.nom.sg.gloss*
wĕz+e [vɔ̃.zɛ]wąz [võs]'snake
łuprzĕz+y [wu.pšɔ̃.zɪ]łuprząz [wu.pšõs]'harness'
gałĕź+e [ga.wɔ̃.zɛ]gałąź [ga.wõɕ]'branch'

The generalization is that [ɔ̃] is replaced by [õ] in a closed syllable, that is, in a syllable that ends in a consonant[18].

(17) Nasal Shift: *ɔ̃C)_σ, that is, no [ɔ̃] in a closed syllable.

The implementation of Nasal Shift violates IDENT[±tense] and IDENT[±round], so these constraints must be ranked lower than Nasal Shift. The only admissible nasal vowels in Kurpian are [ɔ̃] and [õ], which means that Kurpian has undominated segment inventory constraints against other nasal vowels, for example *ɔ̃ (don't be nasal lax ɔ). The evaluation of *wąz* 'snake' is given in (18). I ignore the issue of Final Devoicing.

(18)//vɔ̃s// → [võs]

	*ɔ̃	Nasal Shift	IDENT[±tense]	IDENT[±round]
(a) vɔ̃s		*!		
→ (b) võs			*	*
(c) vɔ̃s	*!			*

Nasal Shift is complicated by roots in which nasal vowels are followed by a stop or an affricate.

(19) *nom.pl.nom.sg.gloss*
zĕb+y [zəm.bɪ]ząb [zomp]'tooth'
rzĕd+y [žən.dɪ]rząd [žont]'row'
łokrĕg+y [wɔ.krəŋ.gɪ]łokrąg[19] [wɔ.kroŋk]'district'

The complication is of two kinds. First, we do not see [ɔ̃] in the surface representation, so there is no trigger for Nasal Shift. Second, the syllable is always closed, regardless of whether we have [o] or [ə]: [zomp] and [zəm.bɪ].

Both of these difficulties disappear if we assume that the words in (19) have underlying nasal vowels rather than vowel plus nasal combinations shown in the surface representations in (19); that is, the underlying representations of the stems

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[18] The pattern extends also to verbs, for example, *trząść* [tšɔ̃ɕtɕ] 'shake' – *trzĕsë* [tšɔ̃sə] 'I shake', *trzĕses* [tšɔ̃ɕɛs] 'you shake', *trzĕśe* [tšɔ̃ɕɛ] 'he shakes', and so forth.

[19] Notice that the vowel is *ą*, as predicted by Nasal Shift.

are //zɔ̃b// 'tooth', //žɔ̃d// 'row' and //ɔkrɔ̃g// 'district', respectively. The surface representations are then derived by Nasal Decomposition: $\tilde{V} \rightarrow VN$. The place of articulation of the nasal consonant is determined by Nasal Assimilation.

(20) Nasal Assimilation (NA): The nasal and the following stop[20] must agree in the place of articulation.

Consequently, we have bilabial [m] before a bilabial stop in *zę̈by* and *ząb* 'tooth', dental [n] before dentals in *rzę̈dy* and *rząd* 'row', and velar [ŋ] before velars in *łokrę̈gy* and *łokrąg* 'district'.

Nasal Decomposition, $\tilde{V} \rightarrow VN$, must be limited to the context of stops, so that it does not extend to the pure nasal vowels in (16).

(21) Nasal Decomposition: *ṼStop, that is, no nasal vowel before a stop.

Nasal Decomposition, like any decomposition process[21], violates Integrity, a constraint that bans decomposition[22].

(22) Integrity: No multiple correspondents of an input segment.

An analysis of the data in (19) requires one more step. For the analysis to go through, Nasal Decomposition must be held off until Nasal Shift has taken place because after Nasal Decomposition all syllables are closed by a nasal consonant. Nasal Shift can work correctly only if the outputs contain nasal vowels and some but not all syllables are closed, as in /zɔ̃b/, a closed syllable, so Nasal Shift takes effect: //zɔ̃b// $\rightarrow$ /zõb/ *versus* /zɔ̃.bɨ/, an open syllable so Nasal Shift is inapplicable: //zɔ̃bɨ// = / zɔ̃.bɨ/.

In other words, for the system to work correctly, we need two stages of evaluation: the first stage, prior to Nasal Decomposition, at which we execute Nasal Shift, and the second stage at which Nasal Decomposition applies deriving the correct surface form. This mode of processing is not available in standard OT, which is founded on the tenet that all evaluation is simultaneous and no derivational stages are permitted. The correct framework for an analysis of Nasal Shift and Nasal Decomposition is Derivational OT.

Derivational OT assumes that the grammar contains phonological levels or strata. This idea was proposed in 1997, independently, by Kiparsky (1997) and Rubach (1997). It was developed later in Bermúdez-Otero (1999), Kiparsky (2000) and Rubach (2000a, 2000b). Derivational levels constitute miniphonologies with

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[20] The category 'stop' includes affricates since, as is widely assumed, affricates are strident stops; vide: J. Rubach (*Affricates as strident stops in Polish*. Linguistic Inquiry 1994, Vol. 25, pp. 119–143) for discussion.

[21] Vide: J. Rubach, *Duke-of-York derivations in Polish*. Linguistic Inquiry 2003, Vol. 34, pp. 601–629; J. Rubach, *Soft Labial Conspiracy in Kurpian*. Journal of Linguistics 2014, Vol. 50, 185–230.

[22] J. McCarthy and A. Prince, op. cit.

their own inputs and ranking of constraints because constraints may be reranked between levels. Relevant for our purposes here are Level 1 (the stem level) and Level 2 (the word level). The winner from Level 1 is the input to Level 2, at which GEN generates a new set of candidates for evaluation.[23]

The evaluation of *ząb* //zɔ̃b// 'tooth' is now as follows.

(23) Level 1//zɔ̃b// → /zõs/

	Nasal Shift	Integrity	Nasal Decomp	IDENT[±tense]	IDENT[±round]
(a) zɔ̃b	*!		*		
→ (b) zõb			*	*	*
(c) zəmb		*!			*

Candidate (23a) violates Nasal Shift because nasal schwa appears in a closed syllable. This violation is avoided by candidates (23b) and (23c), as neither of them has a nasal schwa. Candidate (23c) has decomposed the nasal vowel, a fatal violation of Integrity. The necessary rankings are Integrity >> Nasal Decomposition and Nasal Shift >> IDENT[±tense] and IDENT[±round].

The ranking of the constraints in (23) delivers the correct result also in the nom.pl. form *zẽby*.

(24) Level 1//zɔ̃b+ɨ// → /zɔ̃bɨ/ (no change)

	Nasal Shift	Integrity	Nasal Decomp	IDENT[±tense]	IDENT[±round]
→ (a) zɔ̃.bɨ			*		
(b) zõ.bɨ			*	*!	*
(c) zomb		*!		*	*

Nasal Shift is mute on the output in (24a) because /ɔ̃/ is not in a closed syllable. Candidate (24c) fatally violates Integrity because the nasal vowel has been decomposed into a vowel and a consonant. Candidate (24b) is unfaithful on the IDENT constraints for no reason because, with Nasal Shift being mute, nothing compels the change of the vowel. The winner is the faithful candidate /zɔ̃.bɨ/, which is the correct result.

The evaluation of both *ząb* and *zẽby* continues at Level 2, at which Nasal Decomposition is reranked above Integrity, so nasal vowels before stops decompose into oral vowels and nasal consonants. Nasal Assimilation (NA) that played no role at Level 1 now becomes active and makes sure that the nasal consonant assumes the place of articulation of the following stop. As noted earlier, the inputs to Level 2 are the winners from Level 1. I ignore the constraints that are responsible for Final Devoicing.

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[23] Vide the discussion in J. Rubach (*Derivational meanders of High Vowel Palatalization in Polish*. Lingua, Vol. 199 [in press]).

(25) Level 2 /zõb// → [zomp]

	Nasal Shift	Nasal Decomp	Integrity	ID[±tense]	ID[±round]	NA
(a) zɔ̃p	*!	*		*	*	
(b) zõp		*!				
→ (c) zomp			*			
(d) zonp			*			*!

Level 2 evaluation does not tolerate nasal vowels before stops, an effect of the reranking from Integrity >> Nasal Decomposition at Level 1 to Nasal Decomposition >> Integrity at Level 2. The consequence is that candidates (25a) and (25b) are not viable contenders. Candidate (25d) does not run into such difficulties, but it loses to (25c) on Nasal Assimilation because [n] is dental and [p] is bilabial. Candidate (25c), [zomp] wins, which is correct because [zomp] is the attested surface form.

The evaluation of the nom.pl. *zę̈by* presents no difficulty either.

(26) Level 2 /zɔ̃.bɨ/ → [zəmbɨ]

	Nasal Shift	Nasal Decomp	Integrity	ID[±tense]	ID[±round]	NA
(a) zɔ̃.bɨ		*!				
(b) zõ.bɨ		*!		*	*	
→ (c) zəm.bɨ			*			
(d) zom.bɨ			*	*!	*	
(e) zən.bɨ			*			*!

Nasal Decomposition is mandatory at Level 2, so (26a) and (26b) have no chance of winning. Candidate (26d) loses because it has made a spurious change of the vowel, not required by any constraint. Candidate (26e) has an unassimilated [nb] and thus loses on Nasal Assimilation. The winner, [zəmbɨ], is the attested surface form, so the evaluation is correct.

Conclusion

Kurpian nasal vowels [ɔ̃] and [õ] come from Old Polish lax [ã] and tense [ɑ̃], respectively. The formal apparatus of generative phonology predicts exactly the vowels found in Kurpian as the most natural response to the process of Raising. The point is that the shortest and the least costly way of implementing Raising is the derivation of nasal schwa [ɔ̃] and nasal tense [õ]. Standard Polish with its change of [ã] into [ɛ̃] and [ɑ̃] into [ɔ̃] is a more complicated system because the changes violate faithfulness constraints mandating the preservation of the feature [±back] and [±tense].

Modern Kurpian has nasal vowels rather than vowel plus nasal combinations in the underling representation. The consequence is that Kurpian must have an active process of Nasal Decomposition that applies in the context of stops. The

postulation of underlying nasal vowels is supported synchronically by Nasal Shift whereby nasal schwa is turned into [ɔ̃] in a closed syllable. Nasal Shift works correctly on the condition that evaluation is conducted separately at the stem level and at the word level. The analysis thus supports the postulate that standard Optimality Theory should be replaced with Derivational Optimality Theory.

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SUMMARY

This paper investigates the problem of nasal vowels in Kurpian. It is argued that Kurpian nasal schwa, as in *gësty*, comes historically from lax nasal *ą* [ã] that was used in Polish in the 15th c. Kurpian tense [õ], as in *wąsy*, comes historically from tense nasal *ą* [ã] that occurred in Polish in the 16th c. Nasal vowels and their alternations in modern Kurpian are analyzed in terms of Derivational Optimality Theory. Noteworthy here are the processes of Nasal Shift and Nasal Decomposition.

STRESZCZENIE

Niniejszy artykuł dowodzi, że kurpiowskie nosowe *szwa*, jak np. w *gësty*, zapisywane literą *ë*, pochodzi historycznie z samogłoski krótkiej *ą*, wymawianej jako nosowe [a], czyli jako [ã], w polszczyźnie XV w. Natomiast kurpiowskie nosowe [õ], jak np. w *wąs*, zapisywane literą *ą* pochodzi z samogłoski długiej *ą*, wymawianej jako nosowe *å*, czyli jako [ã], w polszczyźnie XVI w. Dzisiejsze kurpiowskie nosowe *szwa*, lepiej niż *ę* w języku ogólnopolskim, odzwierciedla stan literackiej polszczyzny mówionej w XVI w. Analiza formalna przeprowadzona w ramach teorii fonologii generatywnej stawia hipotezę, że nie tylko w kurpiowskim, lecz także w polszczyźnie literackiej XVII w. *ą* wymawiane było jako [õ] z zamkniętym *o*, a nie jako [ɔ̃] z otwartym *o*, tak jak ma to miejsce w dzisiejszym języku ogólnopolskim. Ogólnie rzecz biorąc, odnotować trzeba, że występuje uderzające podobieństwo pomiędzy system samogłoskowym dzisiejszej

kurpiowszczyzny a systemem samogłoskowym polszczyzny literackiej XVI w., por. punkty (1) i (6). W dalszej części artykułu przeprowadzona jest analiza alternacji obejmujących samogłoski nosowe w dzisiejszej kurpiowszczyźnie.