CZYTA VS. *CZYTAJ* AND THE DETERMINATION OF POLISH CONJUGATIONAL DESINENCES

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I.

If Russian non-past conjugational endings are compared to those of other Slavic languages, particularly those of West and South Slavic, one immediately can see that there are at least four fundamental differences present, as follows:

1. there is a much greater use of *-m* in the first person singular, compared to the almost total use of *-u* in Russian.

2. the first personal plural ending terminates in a vowel, in contrast to the Russian desinence, whose final segment is *m*.

3. there is no general use of *t* to mark all third person endings, as there is in Russian.

4. the highly productive class of *aj*-suffix verbs does not take vocalic endings (outside the third personal plural), in contrast to the exclusive use of vocalic endings in the Russian non-past forms.

In view of these significant differences it can be said that each Slavic conjugational system should be evaluated and described on its own terms. It may well turn out that those Slavic languages which share the four above-mentioned features have significant structural differences when contrasted to the Russian system, which to a certain extent has dominated the recent study of all Slavic conjugation, in view of Jakobson's brilliant discoveries in the field of Russian conjugation (Jakobson 1948, Schenker 1954:469).

The present paper is an attempt to reanalyze the conjugational endings of Polish in their own terms. The basic Jakobsonian assumption of a single-stem system is fully accepted. However, the morphemic composition of the individual desinences is not assumed to be identical to that of Russian. This view will be especially useful in our assessment of the zero desinences of Polish conjugation which play a very different role than in the Russian pattern.

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The inadequacy of extant attempts to describe Polish conjugation becomes especially clear when one considers the non-past third person singular (**čita** *czyta*)[1] as opposed to the second person singular imperative form (**čitaj** *czytaj*). While the corresponding Russian verb forms **čitaj-ot** and **čitaj-ø** posed no special problems for Jakobson and subsequent scholars, since they merely involve the affixation of the endings **-ot** and **-ø**, respectively, it is apparent that the Polish forms **čita** and **čitaj** cannot be so simply treated. If we start from the assumption that Polish, like Russian, has the basic stem **čitaj-** in this case, ending in the consonant *jot*, we find that in the third person singular form there is a truncation of the *jot* with no overt ending; while the imperative form does not experience *jot* truncation, it has the same absence of an overt ending added to the stem. If we can interpet the absence of an overt ending as a zero, the basic question for us then is why a zero ending should truncate a jot in one form but not cause it to truncate in the other.

Before suggesting a solution to this problem let us review the different solutions that have been advanced for this problem of Polish conjugation in four studies: Schenker (1954), Rothstein (1970), Gussman (1980), and Grzegorczykowa et al (1984). Schenker (1954:473, 476) sets up the stem **čitaj-**, but claims that the non-past tense uses the desinential theme vowel *a* with *aj*-suffix verbs, which causes the suffix *aj* to drop by a non-automatic rule of conjugation. Thus, the third person form adds the desinence **-a** to the stem *čitaj-* and by a special rule the *aj* is truncated, leaving the form **čita**. The use of an **a**-ending, which morphophonemically causes a preceding *aj*-suffix to drop, seems unmotivated and *ad hoc*. One suspects that the **a**-ending was posited as being affixed to **čitaj-**, rather than zero, only in order to differentiate the third person form **čita** from the imperative **čitaj**, since it is inconvenient for us to say that both **čita** and **čitaj** consist of the identical stem and ending, yet are different on the surface. Having derived the form **čita** by means of **čitaj-** plus the ending **-a**, Schenker then posits a zero in the imperative, which yields **čitaj** in a straightforward manner (1954:474).

Rothstein's 1970 Polish verbal system, in a sense, does the reverse of what Schenker's had done. While the latter differentiated the third person and imperative forms by asserting that the non-past tense uses a vocalic ending, but the imperative uses a zero, Rothstein claims that the non-past uses a zero, which causes the truncation of stem-final *jot* (1970:11), while

[1] In general, boldface is used for morphophonemic transcription and italics for standard Polish orthography.

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the imperative uses the vocalic **-ij** ending, which then gets truncated itself, leaving the bare stem **čitaj** in the imperative (1970:14-5).

Both the third person singular and the imperative forms intuitively appear to be using the zero desinence, which explains why the imperative takes the zero in Schenker's system and then, with equal justification, Rothstein's system assigns the zero ending to the third person singular form instead. Therefore, let us suggest that both forms can best be described as using the zero desinence and that each attempt to posit a vocalic ending in either the third person singular non-past or the imperative is incorrect and motivated by the desire to derive the needed results by means of phonological environments. Schenker's truncation of the *aj*-suffix before the purported vocalic endings **-am, -aš, -a,** etc., necessitates the otherwise unmotivated loss of the entire *aj*-suffix before a desinence beginning in **-a**. This is a truncation and artificial restoration of the vowel *a*, in essence, and misses the opportunity to have a more economical truncation of only the stem-final *jot* in the non-past tense, where the suffixal **a** is left intact and can appear before the verbal personal endings in *czytam, czytasz,* etc.

Rothstein's use of the imperative ending **-ij,** which is affixed to the stem **čitaj-** and then gets truncated itself, raises objections concerning the choice of the basic form of the imperative desinence. The ending **-ij** is put forth as the basic form of the imperative ending, with the alternants **-ij** and **-Ø**. However, the choice between **-ij** and zero must be made according to general principles. As established by Jakobson, one must find a form which could phonologically admit either of two allomorphs and then observe which of the two is actually selected by the system. In the case of the **-ij** and **-Ø** desinences of the Polish imperative, forms which actually use **-ij** generally admit only this imperative ending and could not use the zero-ending, e.g. *śnij*, but not **śń, ciągnij*, but not **ciągń*, etc. On the other hand, forms using the imperative zero-ending generally also could admit the **-ij** ending phonologically, but simply do not do so; e.g. *pisz, chodź, mów, czytaj.* This fact allows us to fully implement Jakobson's finding concerning the analogous Ukrainian imperative (Jakobson 1984:37), where it is concluded that "we have to ascribe the role of basic alternant precisely to the absence of a vowel."

Gussman's system explains the difference between *czyta* and *czytaj* by positing that the basic form of the imperative *czytaj* contains as its desinence a high lax vowel *ĭ*, which prevents the truncation of the preceding *jot*, but then gets deleted itself (1980:52). This is somewhat similar to Rothstein's use of **-ij** as the basic imperative desinence and the same findings of Jakobson, quoted above, stand as an argument against it. However, Gussman

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posits an absolutely neutralized segment as his imperative ending—lax *ĭ*, which is never realized in any surface form. Such a practice raises numerous objections since it allows one to assume basic forms which contain distinctive features absent in the language being described. Our system will reject this use of features whose only function is to make a rule work.

The Polish Academy grammar (Grzegorczykowa et al 1984:179) states that both third person singular and imperative forms take the zero ending, but that the imperative zero causes truncation as a vowel, while the third personal singular conditions truncation as a consonant. The information that the imperative zero acts like a vowel is apparently based on the fact that it alternates with the vocalic desinence **-ij**. However, since the zero is the basic form of the desinence, one should not have access to the vocalic properties of this zero in the morphophonemic form. This system posits the morphophonemic shape **čitaj-Ø** in both cases, and it is necessary to know the grammatical meaning of the zero in order to conjugate. This is a departure from the operation of conjugational rules which are conditioned phonologically within the verbal system. Stating that the identical stem and ending can yield two different results is tantamount to listing one form as an exception. The system would be preferable and much more economical if the correct result could be obtained from phonological features, rather than from differences of grammatical meaning in identical phonological environments. Thus, while the 1984 Polish grammar comes closest to our idea that a zero-ending is present in both *czyta* and *czytaj*, it uses this zero in an overly simplistic way, implicitly complicating the conjugational system with two different sorts of zero elements. See table 1 for a summary of the four solutions to this problem which we have reviewed.

		Non-past Third Person Singular	Imperative
1.	Schenker (1954)	čitaj-a-Ø → čitaj-a-Ø → čita	čitaj-Ø → čitaj
2.	Rothstein (1970)	čitaj-Ø → čitaj-Ø → čita	čitaj-ij → čitaj-ĭj → čitaj
3.	Gussman (1980)	čitaj# → čitaj# → čita	čitaj-ĭ → čitaj-ĭ → čitaj
4.	Grzegorczykowa et al (1984)	čitaj-Ø → čitaj-Ø → čita (Ø = consonant)	čitaj-Ø → čitaj (Ø = vowel)

Table 1. Four proposals of the morphophonemic difference between Polish *czyta*, 3rd pers. sing., and *czytaj*, imperative.

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As we have seen, there is good reason to consider that both the third person singular non-past and the imperative forms use a zero desinence rather than a vocalic one. However, the key to the solution lies in the fact that in the third person singular we are not dealing with a single zero morpheme, but a multiple zero, i.e. a sequence of more than one zero morpheme. The first zero ending of *czyta*, marking the non-past tense, is paradigmatically opposed to the **e** and **i** non-past tense vowels that follow the verbal stem and begin the desinence in such examples as /ńeśe/ *niesie* and /v'iʒi/ *widzi*. The second zero of the desinence of *czyta*, represents third person in opposition to such personal endings as **-m** and **-š**, in such forms as *czytam, czytasz.* A third zero for singular number, in opposition to the final vowel of *czytamy, czytacie*, can also be posited (Scatton 1981:366). Thus, the form *czyta* consists of the stem **čitaj-**, followed by multiple zeroes. In the case of the imperative form *czytaj*, we have a desinence which signals imperative mood and has zero as its basic form, in addition to an indication of person and number (e.g. **-ćie, -mi,** zero). as in *czytajcie, czytajmy, czytaj.* As to the imperative's desinences for person and number, it has been well established that these endings are really clitic elements which should be considered as separated from the imperative zero-ending by a word-boundary. This special use of the word-boundary, detailed both by Jakobson (1984:9, 35-6) and Grzegorczykowa et al (1984:183), explains why we have the occurrence of interword *sandhi* in this form; i.e. *chodźmy* is realized as [xoćmy] in those dialects which normally devoice obstruents before vowels and sonorants across a word-boundary. This means that the third person singular for *czyta* consists of the stem **čitaj-**, followed by multiple zeros *within* the word-unit, while the imperative *czytaj* consists of the stem **čitaj-** and only one zero-ending within the word-unit, but two more zeroes[2]—in opposition to **-ćie** and **-mi**—as an enclitic which comes after the word-boundary. See table 2 for illustrations.

	Non-Past	Imperative
1.	#čitaǰ-Ø-Ø-Ø#	#čitaj-Ø#-Ø-Ø#
2.	#čitaǰ-Ø-ć-e#	#čitaj-Ø#-ć-e#
3.	#čitaǰ-Ø-m-i#	#čitaj-Ø#-m-i#

Table 2. Use of desinences in non-past forms as compared to imperative.

[2] Below we shall further substantiate our view that *-cie* and *-my* (**-ćie** and **-mi**) really consist of separate person and number elements and that, consequently, the zero opposed to them is really a sequence of two zeroes.

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As table two reveals, the differential morphemic composition of non-past and imperative desinences leads to very different rules of truncation. These shall be treated fully in part III, after a presentation of all the non-past desinences of Polish conjugation.

We have seen that the imperative desinence really consists of a zero morpheme for the imperative mood *per se*, followed by additional morphemes for person and number, which are enclitic. How do we know that the word-boundary runs precisely between the initial zero-ending and the person/number desinences? The rules of interword *sandhi* determine not only the enclitic status of the imperative person/number desinences, but the status of the zero-ending as belonging to the verb form. Thus, when the first desinence of the imperative uses the **-ij** alternant, the voicing opposition directly preceding it is *not* neutralized, e.g. [rv'ij], but [kp'ij]. However, the voicing opposition *is* lost before the second imperative desinence, as seen when the first desinence is zero, e.g. [xoćmy], [prośmy] or [xoʒmy], [prożmy] in any given dialect (Rothstein 1970:18, Grzegorczykowa et al 1984:183).

The complex differences between the two sorts of zeroes found in Polish *czyta* an *czytaj* pinpoint the error of the analyses we have examined. While the solutions of Schenker, Rothstein, and Gussman counterintuitively posit non-zero endings for one of these two forms, in order to achieve their eventual differentiation, the fourth analysis (Grzegorczykowa et al) uses the zero in both instances, but with the result that we have no formal explanation for the difference between the two verb forms. Our introduction of the notion of a single zero vs. a multiple zero has combined the empirically obvious presence of zero with the need to differentiate these two forms. The totally distinct behavior of the imperative word-final in general, combined with the curious retention of the *jot* of the *aj*-suffix in the imperative, must be interconnected. This can be accomplished neither by denying the existence of a zero-ending in one of these two forms in an arbitrary manner, nor by declaring that the stem and ending are both identical in the two forms. We can only conclude that there is a zero in both cases, but that *czyta* presents a sequence of zeroes in the word-unit, while *czytaj* presents a single zero-ending, immediately followed by the word-boundary.

II.

Having seen that the notion of a single zero vs. multiple zero is essential to the correct morphophonemic differentiation of the Polish forms *czyta* and *czytaj*, let us now attempt to incorporate this into the Polish non-past conjugational system as a whole entity. Although it is clear that the Polish

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non-past conjugational endings express tense within three conjugational classes, as well as person and number, the literature has been less clear on the issue of whether we are dealing with single, indivisible units or, perhaps, more than a single desinential unit. While Schenker (1954:473) claimed that "present desinences contain a suffix denoting the present, followed by a suffix denoting the person and number," many traditional treatments, including even the recent Polish Academy grammar (Grzegorczykowa et al 1984:183) treat all non-past tense endings as indivisible wholes.

On the basis of our demonstrated need for multiple zero elements, as seen above, we shall now confront the question of whether there are consistent paradigmatic features representing tense, person, and number in the Polish non-past tense. In order to achieve a complete notion of the paradigmatic oppositions of conjugation class, person, and number within the non-past set of forms, our first task involves the extension of the use of the zero symbol. Polish conjugational endings can range in length from zero morphophonemes to as many as three. To fully observe all paradigmatic relations, let us assume that all desinences are three morphophonemes in length (evaluating nasal vowels as one unit for this purpose, even though they can be phonetically realized as vowel plus glide[3]). Endings consisting of fewer than three units can be said to contain zeroes, which stand in paradigmatic opposition to the non-zero segments of desinences which contain the full three units.

This leads us to an assumption of uniformly tripartite desinences as shown in table three on the next page, which apply to all three conjugational classes.

Notice that in those instances where vowels are contiguous or separated only by a zero, the first vowel is truncated, according to the well-known principles of Polish and other Slavic conjugation (Schenker 1954:4750. These cases have been indicated by a slash in table three. Having aranged all of our conjugational desinences into tripartite sequences of morphemes, let us now evaluate whether we can arrive a consistent representation of conjugation class, person, and number.

[3] Although phonemically the nasal vowels are often equivalent to *oral vowel plus* $\tilde{w}$ or *oral vowel plus* $\tilde{j}$ (Feldstein 1983:7-9), we shall assume that the morphophonemic basic forms of verbs, including both stems and desinences, contain ǫ and ę. Thus, if the basic stem **pwinǫ-** is considered to end in ǫ, then before the **-eš** ending we have the expected truncation of the stem-final vowel, since it precedes another vowel. Before the infinitive ending **-ć**, the full stem *pwinǫ-* is retained, however. Once the morphophonemic form is arrived at, further rules can then interpret the phonemic value of ǫ, ę; e.g. ǫ before **-ć** is realized as /oń/, etc. Schenker's system (1954:476) of having nasal vowel verbal stems end in *-neń* leads to undesirable rules, such as the truncation of the stem's "two final phonemes . . . before vocalic desinences."

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			SINGULAR					*PLURAL*				
			Pos 1		*Pos 2*		*Pos 3*	*Pos 1*		*Pos 2*		*Pos 3*
A.	Conjugation I:	1.	∠	+	ę	+	Ø	e	+	m	+	i
	Persons:		(= Ø	+	ę	+	Ø)					
		2.	e	+	ś	+	Ø	e	+	ć	+	e
		3.	e	+	Ø	+	Ø	∠	+	Ø	+	ǫ
								(= Ø	+	Ø	+	ǫ)
B.	Conjugation II:	1.	ɪ	+	ę	+	Ø	i	+	m	+	i
	Persons:		(= Ø	+	ę	+	Ø)					
		2.	i	+	ś	+	Ø	i	+	ć	+	e
		3.	i	+	Ø	+	Ø	ɪ	+	Ø	+	ǫ
								(= Ø	+	Ø	+	ǫ)
C.	Conjugation III:	1.	Ø	+	m	+	Ø	Ø	+	m	+	i
	Persons:	2.	Ø	+	ś	+	Ø	Ø	+	ć	+	e
		3.	Ø	+	Ø	+	Ø	Ø	+	Ø	+	ǫ

Table 3. Tripartite endings in the three Polish conjugation classes. Truncations due to vowel plus vowel in endings are shown with a slash, and with their effective realizations in parentheses.

The first position uses a vowel or zero to represent non-past tense, in opposition to the consonantal **w** ending of the past tense. We shall be more concerned, however, with the oppositions that obtain within the non-past system itself. Here, the non-past desinences serve to set off the three conjugational classes by means of the diffuseness feature and the vowel-zero opposition. It could be said that this represents a continuum of vowel weakness, with sonority going from non-diffuse (**e**) to diffuse (**i**) to zero.

In the second morphemic position of our tripartite desinence we find the opposition of person. The first person, regardless of its number or conjugational class, contains the feature of nasality as its invariant in the explicit code. Colloquially, the **-ę** is realized as /e/, which means that the + **sonority** feature, rather than + **nasality**, comes to be the invariant of first person. The second person invariably contains a non-nasal obstruent, while the third person is consistently represented by the zero segment in the second morphemic position. The similarity between first and second positions is striking; the first position, that of conjugation class, opposes plus and minus diffuse to zero, while the second position, that of person, opposes plus and minus nasality to zero. In each case the zero refers to the least marked member of the opposition, in a way reminiscent of other iconic uses of zero

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(Shapiro 1980:76). In the first desinential position the zero indicates the most productive and prevalent conjugation class (including *czytaj-*, etc.), referred to by Tokarski as "a remarkably productive conjugational type" (1951:72), which "can become the classroom point of departure in the teaching of conjugation" (1973:215). In the second position the zero refers to the third person, long recognized as the most unmarked of the three persons and which can even be used in impersonal expressions, which underlines its unmarked character. The third position, which signals number, opposes a consistent zero in the singular to a consistent vowel in the plural. Again, the zero element is regularly found in the unmarked member of the number opposition, the singular. The use of zero for the unmarked member of each of the three conjugational positions has been summarized in table four. See Scatton (1981:366) for a similar use of zero for unmarked person and number in a Bulgarian dialect.

Position 1		*Position 2*		*Position 3*	
– diffuse:	Conj. I (e)	+ nasal:	1st Pers. (ę~m)	Zero:	Singular
+ diffuse:	Conj. II (i)	– nasal:	2nd Pers. (ś~ć)	Vowel:	Plural (i~e~ǫ)
Zero:	Conj. III	Zero:	3rd Pers. (Colloquially, ± sonorant substitutes for ± nasal.)		

Table 4. Invariant features used to oppose conjugation class, person, and number in Polish conjugation.

What evidence is there that this somewhat novel scheme comes closer to the truth than its well-known predecessors? Firstly our scheme rests on the idea of positing many more zero elements than is usually done. In certain instances of only one segmental unit in the desinence, one could argue about where the two zeroes are really located. However, we may answer that our particular arrangement of zeroes in table three has led to our use of the zero exclusively for the least marked members of the oppositions found in positions one, two, and three of our desinences, to represent conjugation class, person, and number. Secondly, we have established that within each of these three desinential positions there are invariant features which clearly set off each oppositional member, whether zero or not. For example, in position one the three conjugational classes consistently use *e*, *i*, and zero. Our only modification has been to recognize the use of morphophonemic **e** and **i** in the first person singular and third person plural, which truncate since they precede other desinential vowels. In position two, the use of the

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nasal feature can only be found in the first person, while the use of non-nasal segments is only found in the second person, and the use of zero is the exclusive property of the third person. Again, in the third position the use of a zero is consistently found in the singular and the use of a vowel is totally consistent in the plural. The fact that quite similar conclusions have been reached in the analysis of Serbo-Croatian (Browne 1968) and Bulgarian (Scatton 1981) lends further weight to this treatment of Polish.

We must maintain a clear distinction between the invariant features which set off conjugation classes in position one, persons in position two, and numbers in position three; and the variables within each of these three groups. Thus, although the second position has its three persons completely opposed by the use of the nasality feature and the zero, other features come into play to oppose smaller subsets of units. For example, the use of consonantal **m**, as opposed to non-consonantal **ę** is a supplementary mark in position two, which serves two subset oppositions: conjugations I/II vs. conjugation III in the subset of first person singular; and singular vs. plural in the subset of the conjugation I/II first person. The subset opposition of continuity is also found in the second position, where it opposes singular to plural (**š** to **ć**), but only in the limited domain of the second person. In position three, the persons are opposed to each other within the subset of the plural number. The significant point about all of these subset oppositions is that they do not apply to all of the paradigmatic units of any of our three positions. The existence of such oppositions has probably been the major factor in the failure of linguists to recognize the invariant oppositions. We are now suggesting that the two types must be separated, in view of the great structural difference between an opposition that applies to all units and one that is highly restricted. Our assignment of conjugation class to position one, person to position two, and number to position three receives its justification primarily on the basis of the fact that these classes are fully opposed in their respective positions, in contrast to the possibliity of subset oppositions of the very same categories in other positions. See table five for a summary of the two types of opposition.

There is a strikingly limited inventory of features which recur in all three positions of conjugational desinences. Diffuseness, nasality, and segment vs. zero are the totality of features used as the invariants of conjugation class, person, and number. The two end positions—first and third—are purely vocalic and use the vowel-zero opposition in common. The middle position, which is unmarked for the exclusive use of vowels or consonants, uses the nasality feature along with the opposition of a segment to zero. The use of an opposition beyond segment vs. zero depends on whether

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	INVARIANT OPPOSITION	*SUBSET OPPOSITION*
Position 1	Conjugation Class: Conj. I (– diffuse) vs. Conj. II (+ diffuse) vs. Conj. III (zero)	—
Position 2	Person: 1st Person (+ nasal) vs. 2nd Person (– nasal) vs. 3rd Person (zero)	A. Conj. I/II (– consonantal) vs. Conj. III (+ consonantal) (SUBSET OF 1ST PERS. SING.) B. Sing. (– consonsantal) vs. Plural (+ consonantal) (SUBSET OF CONJ. I/II 1ST PERS.) C. Sing. (+ continuant) vs. Plur. (– continuant) (SUBSET OF 2ND PERS.)
Position 3	Number: Singular (zero) vs. Plural (vowel)	1st Person (+ diffuse) vs. 2nd Person (– diffuse) vs. 3rd Person (+ nasal/flat) (SUBSET OF PLURAL NUMBER)

Table 5. Comparison of invariant oppositions, which apply to all desinences in the given position to subset oppositions, which apply to restricted portions of the desinences in any given position, as indicated.

there is an opposition of two or three entities, i.e. whether there is a single binary opposition in a position or whether there are two. Positions one and two each involve three entities (conjugation classes and persons), hence they require two binary features. Position three opposes only the two numbers and a single binary opposition is present. The presence of at least one binary opposition implies the use of the segment vs. zero opposition; consequently, this opposition is found in all three positions. A second binary opposition, such as in positions one and two, entails an opposition beyond segment vs. zero. In position one, it is based on diffuseness, while in position two it is based on nasality in the explicit code and sonority (obstruent vs. non-obstruent) in the colloquial style. Thus, the opposition of a segment to zero unites all three positions, the use of sonority features sets off positions one

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and two from three, while the use of diffuseness sets off position one from two.

The use of a consonant in position two implies the identical inventory of units to both the left and right, i.e. when **m**, **š**, or **ć** appear in position two the only possible elements in both positions one and three are **i**, **e**, and zero. On the other hand, the presence of either nasal vowel, regardless of position, can only be in the absence of any consonant in the desinence. The nasal vowels themselves are distributed according to the pattern whereby **ę** is always followed by zero, but **ǫ** is always preceded by zero.

III.

Jakobson's 1948 Russian conjugation system did not provide for the use of the zero desinence in the non-past to the extent to which we have proposed it for Polish. Therefore, our system must incorporate a number of modified rules of truncation in order to operate with the zero elements. This will then allow us to fully account for the types of truncation which we examined above, as exemplified by *czyta*, but *czytaj*. Our first rule of truncation states that a zero desinence has no effect on truncation when it is accompanied by a non-zero desinence within the word-unit. Thus, in the first person singular the stem-final *jot* of *czytaj-* gets truncated before the **-Ø + m + Ø** desinences, since we skip over the zero for truncation purposes and allow the **m** to truncate the *jot*, as usual. Alternatively, we could say that there is a truncation of zeroes themselves, caused by any non-zero desinence within the confines of the word-unit.

Our next rule treats those instances when a zero is not accompanied by a non-zero within the word-unit. In such cases, there is either a single zero, such as in the imperative, or a multiple zero, such as in the third person singular. The single zero causes truncation as if it were a vowel, while the multiple zero causes truncation on the pattern of consonants. The single zero of the imperative, therefore, causes preceding vowels to truncate (e.g. **chodźi-Ø** → **chodźĭ-Ø**), but preceding consonants, including the *jot* of *czytaj-*, remain intact (e.g. **čitaj-Ø**). The behavior of single zeroes appears to be analogous to that of the zero found in nominal declension, since the latter follows stems ending in consonants, which remain intact (i.e. *čitaj-Ø* is analogous to *kraj-Ø*). Multiple zero desinences, on the other hand, behave like consonants in their truncating properties. They cause preceding consonants to drop, as seen in the third person singular non-past form of *czytaj-*, where the multiple zero desinence causes the *jot* to truncate, yielding *czyta*. The essence of our special truncation rules is simply that when a

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desinence consists exclusively of zeroes, single zeros act like vowels, while multiple zeroes act like consonants. This behavior has been illustrated in table 6.

I. When zeroes are found in the desinence together with non-zero units, the zeroes have no effect on truncation.
E.g. **čitaj-Ø + m + i**, as if **j-m**: *czytamy*; **muv'i-Ø + ę + Ø**, as if **i-ę**.[4]

II. When the only desinential elements are zeroes, truncation depends on whether a single or multiple zero is present within the word-unit.

A. A single zero has the truncation effect of a vowel.
E.g. imperatives **čitaj-Ø#Ø + Ø**: *czytaj*; **čitaj-Ø#m + i** : *czytajmy*, no loss of stem-final consonsant. However, stem-final vowel is truncated: **choʒi-Ø#Ø + Ø**: *chodź*; **choʒi-Ø#m + i**: *chodźmy*.

B. A multiple zero has the truncating effect of a consonant.
E.g. *čitaj-Ø + Ø + Ø#*: *czyta*, with loss of stem-final consonsant, as if preceding a consonant.

Table 6. Truncation rules for desinences containing zero morphemes.

We have attempted to view the structure of the Polish conjugational endings in a new way and to show that this structure can successfully deal with a number of issues of Polish conjugation, not the least of which is the use of two very different sorts of zero-ending, as reflected in the forms *czyta, czytaj*.

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[4] The basic morphophonemic shape of this desinence is considered to be **i + ę + Ø**. The truncation of the theme vowel **i** before the **ę** occurs within the desinence, so that the actual desinence used with stems is **Ø + ę + Ø**.

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