

# Optimal specifications: On case marking in Polish\*

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## 1. Introduction

Polish noun inflection shows paradigms of case forms that combine features of the flexive type and of the agglutinative type of morphological formations. As I shall argue in Section 2 (which presents relevant data), this mixture provides a particular challenge for any approach that takes seriously the morphological forms (and their form-related properties) used in case marking. Section 3 starts from some well-known observations on differential case marking and case syncretism that turn out to be crucial when the interplay of gender and case is to be explained. Section 4 provides a detailed analysis of the inflectional system of Polish nouns that avoids the rampant multiplication of paradigms and declensions found so often in Polish grammars. On the basis of multi-level classification systems for gender and case that are supported by internal and external evidence, a limited number of noun endings are identified, which, for the most part, are given unambiguous categorial specifications and conditions of application that predict their distribution over inflectional forms or ‘cells’ of paradigms. Section 5 adds a short conclusion.<sup>1</sup>

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1. The following abbreviations will be used: m. (masculine), f. (feminine), n. (neuter); anim. (animate), inan. (inanimate); pers. (personal), impers. (impersonal), hon. (honorific); sg. (singular), pl. (plural); nom. (nominative), voc. (vocative), gen. (genitive), dat. (dative), acc. (accusative), abl. (ablative), loc. (locative), ins. (instrumental); dir. (direct), obl. (oblique); vel. (velar).

Table 1. Case forms in Turkish

	nom.	acc.	gen.	dat.	loc.	abl.
singular	<i>ev</i>	<i>evi</i>	<i>evin</i>	<i>eve</i>	<i>evde</i>	<i>evden</i>
plural	<i>evler</i>	<i>evleri</i>	<i>evlerin</i>	<i>evlere</i>	<i>evlerde</i>	<i>evlerden</i>

EV ('house')

## 2. Agglutination vs. inflection

Case forms may be classified by two different types of criteria, viz. according to form and function, respectively (Comrie 1986): (i) case forms are distinguished and are classified in terms of the occurrence or non-occurrence of pertinent morphological markers (or 'formatives' or 'exponents'), (ii) case forms are distinguished and are classified in terms of their syntactic potential as in traditional approaches.

In agglutinative systems, formal and functional classifications may largely coincide as may be exemplified from Turkish. By standard analyses, Turkish (cf. Table 1) possesses six cases.

The nominative (of the singular) exhibits the bare base form. As for the remaining cases, there are special endings each marking one and only one case. Depending on stem types, endings may show variants (primarily due to rules of vowel harmony) but variation is automatic and morphologically irrelevant. As usual, personal pronouns may show some irregularities. Otherwise, case suffixes remain unaltered and apply to arbitrary nouns both in the singular and the plural. Thus, Turkish case suffixes conform to the expectations raised by a classical morphemic model: here inflection realizes the ideal of a biunique relation between form and function favored by so many a linguistic theory.

Flexive (or 'fusional') systems do not comply with this ideal as shown by paradigms of the Latin standard declensions (see Table 2 based on Risch 1977; the macron indicates vowel length). Again, case marking is realized by adding endings to stems. However, division of stems and endings is not trivial and endings are bound to numbers. Different from Turkish, the relation between form and function is non-unique in both directions. For instance, there are five distinct endings available for the genitive singular. What is more, these endings cannot be regarded as mere variants of a common basic pattern on account of their manifest formal dissimilarity. At the same time, one and the same ending may occur in apparently unrelated paradigmatic positions. Consider the ending *-ī*. It appears in the gen.sg., the abl.sg., the dat.sg., and the nom.pl. Obviously, the classical concept of morpheme where morphemes are conceived of as

Table 2. Latin declensions

singular	m./f.						n.
	nom.	voc.	acc.	abl.	dat.	gen.	nom./voc./acc.
a-decl.	<i>capra</i>	<i>capra</i>	<i>capram</i>	<i>caprā</i>	<i>caprae</i>	<i>caprae</i>	–
o-decl.	<i>lupus</i>	<i>lupe</i>	<i>lupum</i>	<i>lupō</i>	<i>lupō</i>	<i>lupī</i>	<i>iugum</i>
i-decl.	<i>ignis</i>	<i>ignis</i>	<i>ignem</i>	<i>ignī</i>	<i>ignī</i>	<i>ignis</i>	<i>mare</i>
C-decl.	<i>rēx</i>	<i>rēx</i>	<i>rēgem</i>	<i>rēge</i>	<i>rēgī</i>	<i>rēgis</i>	<i>nōmen</i>
u-decl.	<i>ictus</i>	<i>ictus</i>	<i>ictum</i>	<i>ictū</i>	<i>ictū</i>	<i>ictūs</i>	<i>genu</i>
e-decl.	<i>diēs</i>	<i>diēs</i>	<i>diem</i>	<i>diē</i>	<i>diei</i>	<i>diei</i>	–
plural	nom./voc.	acc.	abl./dat.	gen.	nom./voc./acc.		
a-decl.	<i>caprae</i>	<i>caprās</i>	<i>caprīs</i>	<i>caprārum</i>	–		
o-decl.	<i>lupī</i>	<i>lupōs</i>	<i>lupīs</i>	<i>lupōrum</i>	<i>iuga</i>		
i-decl.	<i>ignēs</i>	<i>ignīs</i>	<i>ignibus</i>	<i>ignium</i>	<i>maria</i>		
C-decl.	<i>rēgēs</i>	<i>rēgēs</i>	<i>rēgibus</i>	<i>rēgum</i>	<i>nōmina</i>		
u-decl.	<i>ictūs</i>	<i>ictūs</i>	<i>ictibus</i>	<i>ictuum</i>	<i>genua</i>		
e-decl.	<i>diēs</i>	<i>diēs</i>	<i>diēbus</i>	<i>diērum</i>	–		

CAPRA ('goat'), LUPUS ('wolf'), IGNIS ('fire'), REX ('king'), ICTUS ('blow'), DIES ('day'); IUGUM ('yoke'), MARE ('sea'), NOMEN ('name'), GENU ('knee')

“roots and affixes which serve as Saussurean signs” (Spencer 2006: 105) is not suited well to such a system.

Within the traditional word-and-paradigm model, there are two moves to be made in reaction. First, the inventory of noun lexemes is divided into classes of items which fit into a common pattern of building inflectional forms, called declensions (*a*-declension, *o*-declension, etc.). For each declension a separate set of case endings is established. (Neuter nouns deviate from the general sets of endings in the nominative, vocative and accusative. The remaining forms of neuters follow the pattern of masculines. They have not been listed in Table 2 for this reason.)

The various sets of endings differ not only with respect to the make-up of forms, and different paradigms diverge not only by employing distinct sets of endings. Rather they also exhibit different patterns of syncretism, available endings being distributed differently over the range of relevant syntactic functions. For example, lexemes of the *o*-declension such as LUPUS show distinct forms in the nominative and the vocative, *lupus* and *lupe*, respectively. In the remaining declensions (and in the plural) this distinction is absent. In the plural, there are no distinct forms for ablative and dative. With neuters, nominative, vocative and accusative always coincide in the singular and in the plural as well.

From a syntactic point of view, this kind of variation between paradigmatic patterns may appear unfavorable. If maximally simple rules of agreement and government are desired, paradigms would be welcome that provide matching sets of case forms, hence, identical arrays of cells. For this to be achieved, all case distinctions that are formally drawn in some (sub-) paradigm are posited for all of the (sub-) paradigms (Lyons 1968: 293). This is the second move, crucial for the traditional model. Thus, as a matter of principle, formal differences in the structure of paradigms are made to disappear. While this contributes to the strength of the word-and-paradigm approach, it also constitutes a severe limitation of the model.

Differences between patterns of syncretism (or patterns of differentiation) might well be arbitrary from a synchronic point of view. Often enough, however, there are systematic aspects that should not be neglected in a proper treatment of inflection. For instance, the luxury of allowing for specialized vocative forms seems to be particularly appropriate for the *o*-declension, that is, the declension that designations of (male) persons are preferably put into. The fact that there are less case distinctions in the plural than in the singular obeys a widely observed pattern, too.

Turning to Polish, I shall consider first a representative set of singular paradigms of non-feminines, that is, of masculine and neuter nouns. The endings involved are displayed in Table 3. Notation of endings is orthographic using main variants in case of variation. The inventory of inflectional forms is assumed as given in Orzechowska (1999) and Swan (2002). These grammars also provide details and additional minor paradigms that are beyond the present discussion. For analyses of syncretisms in Polish noun inflection see Laskowski (1989), Menzel (2000), and Gunkel (2003).

Noun stems may be ‘hard’ or ‘soft’. Hard stems show off-sets in consonants from the basic (non-palatalized, non-affricated) sets of labials, dentals and

Table 3. Polish noun endings in the singular: masculines and neuters

	nom.	voc.	acc.	loc.	dat.	gen.	ins.
STUDENT, m.	-	' <i>e</i>	- <i>a</i>	' <i>e</i>	- <i>owi</i>	- <i>a</i>	- <i>em</i>
CUKIER, m.	-	' <i>e</i>	-	' <i>e</i>	- <i>owi</i>	- <i>u</i>	- <i>em</i>
BIOLOG, m.	-	- <i>u</i>	- <i>a</i>	- <i>u</i>	- <i>owi</i>	- <i>a</i>	- <i>em</i>
BANK, m.	-	- <i>u</i>	-	- <i>u</i>	- <i>owi</i>	- <i>u</i>	- <i>em</i>
BIURO, n.	- <i>o</i>	- <i>o</i>	- <i>o</i>	' <i>e</i>	- <i>u</i>	- <i>a</i>	- <i>em</i>
TANGO, n.	- <i>o</i>	- <i>o</i>	- <i>o</i>	- <i>u</i>	- <i>u</i>	- <i>a</i>	- <i>em</i>
POLE, n.	- <i>e</i>	- <i>e</i>	- <i>e</i>	- <i>u</i>	- <i>u</i>	- <i>a</i>	- <i>em</i>

STUDENT ('student'), CUKIER ('sugar'), BIOLOG ('biologist'), BANK ('bank'),  
BIURO ('office'), TANGO ('tango'), POLE ('field')

velars or in /r/ or /w/ (orthographically, in < p b f w m >, < t d s z n >, < k g ch >, < r > or < l >). Otherwise stems are soft.<sup>2</sup> Remarkably, for some inflectional endings application depends on a stem alternation known as softening, i.e., a change from a hard stem alternant to a soft one. As usual this is indicated by putting a prime-sign (figuring as a 'soft sign') before the name of the ending (as in: '-e'); cf. *studencie* (< *student* + '-e'), voc./loc.sg. of STUDENT. (For details see reference grammars; cf. also Cameron-Faulkner and Carstairs-McCarthy 2000. Stem alternations, which may be due to consonant or vowel shifts, will not be discussed in this paper.) To start with, it may be observed that the structure of the nominal inflectional system of Polish taken as a whole resembles the Latin one, as might be expected, but there are seven cases, not six. Again, case-number-marking is cumulative and realized (primarily) by endings. Some familiar patterns of formal (non-)differentiation also reappear. For instance, as in related languages, neuters do not distinguish nominative, vocative and accusative. It may be noted here that, in the singular, masculines of the type POETA (base form in -a) are inflected like the corresponding feminines.

Considering the form-function-relationship, we find non-unique relations in both directions. The ending -u provides the most noteworthy example. Within the seven exemplary paradigms shown in Table 3 this ending does not appear in the first paradigm. It appears in the genitive in the second paradigm; in the vocative and locative in the third paradigm; in the vocative, locative and genitive in the fourth paradigm; in the dative in the fifth paradigm; in the locative and dative in the sixth paradigm and in the seventh paradigm. Again, this distribution, arbitrary as it seems, does not fit well into a morphemic model. No particular problems seem to arise in a word-and-paradigm model on the Latin pattern: what one would need to do is establish seven declensions that differ with respect to the sets of endings employed. However, it should be observed that just about all endings appear in more than one declension. As a limit, in a particular case (here: the instrumental) all non-feminine nouns may share a common ending that is specific to this case. The same observation applies to the

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2. Consonants that figure as off-sets of hard and soft stems may be termed *functionally* hard and soft, respectively. Functionally hard consonants, e.g., /s/ and /z/, are also *phonetically* hard. Phonetically soft consonants (i.e., palatalized and palatal consonants) are also functionally soft, e.g., /ɕ/ and /ʒ/. This group includes (in orthographical notation): < pi bi fi wi mi >, < ki gi chi >, < ǰ/ci dź/dzi ś/si ź/zi ń/ni > and < j >. However, the phonetic and the functional distinction are not co-extensive as there are also phonetically hard consonants that are functionally soft, e.g., /ʃ/ and /ʒ/. This group includes (in orthographical notation): < c dz cz dź sz rz/z >. (The treatment of /l/ (< l >), which is functionally soft, differs in the literature.) In the text of this paper 'soft' and 'hard' refer exclusively to *functional* notions.

Table 4. Polish noun endings in the singular: feminines

	nom.	voc.	acc.	loc.	dat.	gen.	ins.
LAMPA, f.	-a	-o	-ę	'-e	'-e	-i	-ą
ZIEMIA, f.	-a	-o	-ę	-i	-i	-i	-ą
GOSPODYNI, f.	-i	-i	-ę	-i	-i	-i	-ą
NOC, f.	-	-i	-	-i	-i	-i	-ą

LAMPA ('lamp'), ZIEMIA ('land, earth'),  
GOSPODYNI ('landlady, hostess, housewife'), NOC ('night')

feminine, which possesses its own invariant ending for the instrumental. Table 4 displays four major feminine paradigms. For the most part, feminine endings differ from non-feminine ones. The four exemplary feminine singular declensions, however, diverge only occasionally. Here, in distinct paradigms, endings reappear with partly overlapping distributions. Note that the ending *-i* is rendered orthographically as <i> or <y> according to allophonic variation, cf., e.g., the forms *nocy* (<noc + -i>) of NOC or *lampy* (<lamp + -i>) of LAMPA vs. *gospodyni* of GOSPODYNI.<sup>3</sup>

Table 5 presents a representative set of plural paradigms. As in the non-feminine singular and in the feminine singular, in the plural, too, there is an invariant instrumental ending that is used in all regular paradigms (*-ami*, with an exceptional variant *-mi*). The same holds for the locative and the dative. Neglecting case-number-cumulation, these endings approach the Turkish pattern to a considerable degree: here, for one function (i.e., case-number combination) there is one and only one ending, which in its turn is restricted to just this function.

The existence of competing case endings allows for a multiplicity of paradigms. This is in particular so if alternatives multiply each other's effects. In plural paradigms, there are instances of each and every combination of the three standard nominative/vocative/accusative formations (in *-i*, *-e*, and *-a*) and of the three genitive formations (in *-ów*, in *-i*, endingless). Thus nine types can be distinguished in addition to those that exhibit the special masculine endings *'-i* and *-owie* in the nominative (and vocative) plural. Moreover, the overall number of declensions is further increased if combinations of singular and

3. <y> represents [i], which appears after *phonetically* hard consonants such as /ts/ (<c>), while <i> represents [i], which appears elsewhere. Note that /k/ and /g/ 'automatically' soften before *-i* (Swan 2002: 15) and require, therefore, [i] (orthographically <i> as in *córki*, gen.sg. of *CÓRKA*, 'daughter'). The same applies to /l/. Stem-final /k/ and /g/ also soften before *-em* (hence *biologiem*, *bankiem*, *tangiem*, ins.sg. of *BIOLOG/BANK/TANGO*).

Table 5. Polish noun endings in the plural

	nom./voc.	acc.	loc.	dat.	gen.	ins.
GENERAL, m.	-owie	-ów	-ach	-om	-ów	-ami
STUDENT, m.	-'i	-ów	-ach	-om	-ów	-ami
CUKIER, m.	-i	-i	-ach	-om	-ów	-ami
MYSZ, f.	-i	-i	-ach	-om	-i	-ami
LAMPA, f.	-i	-i	-ach	-om	-	-ami
PLAC, m.	-e	-e	-ach	-om	-ów	-ami
NOC, f.	-e	-e	-ach	-om	-i	-ami
ZIEMIA, f.	-e	-e	-ach	-om	-	-ami
MUZEUM, n.	-a	-a	-ach	-om	-ów	-ami
POPOŁUDNIE, n.	-a	-a	-ach	-om	-i	-ami
BIURO, n.	-a	-a	-ach	-om	-	-ami

GENERAL ('general, mil.'), STUDENT ('student'), CUKIER ('sugar'), MYSZ ('mouse'), LAMP ('lamp'), PLAC ('[town] square'), NOC ('night'), ZIEMIA ('land, earth'), MUZEUM ('museum'), POPOŁUDNIE ('afternoon'), BIURO ('office')

plural paradigms are considered, these being not in biunique correspondence. All in all, Orzechowska (1999) assumes about 50 declensions.

Throughout noun paradigms, there is massive overlap. There are considerable identities in the make-up of inflectional forms between different paradigms, and the relevant endings may be even identical from a functional point of view.<sup>4</sup> Thus it is reconfirmed that, in this system, most individual endings are not tied to a particular declension or paradigm. Consequently, there are no 'sets of endings' competing *en bloc* with other sets of endings (as in Latin). To a degree, the very notion of declension is, then, undermined in such a system. Instead of declension-specific sets of endings there are three subinventories that supply paradigms with endings, viz. (i) singular endings of non-feminines, (ii) singular endings of feminines, and (iii) plural endings. Paradigms are mainly distinguished by differences of choice between the items they select from these three subinventories. In sum, what we encounter in Polish noun inflection is neither a pure agglutinative system following the Turkish model nor a system of declensions according to the Latin pattern.

4. Similar observations can be made with respect to other Slavonic languages. See, e.g., Müller (2004) on Russian, who emphasizes strongly the necessity to take care of both intra- and interparadigmatic identities of form. Likewise, Baerman, Brown, and Corbett (2005: Sec. 5.4, also on Russian) point out the inadequacy of traditional accounts that treat paradigms as 'monolithic units'.

Polish noun inflection holds a middle position between morpheme-centered and paradigm-centered morphology.

### 3. Differential case marking and case syncretism

As in Latin, distinctions of case are sometimes marked on case forms in Polish, sometimes they are not. The distinction of nominative and accusative is a case in point. In languages that have it, this distinction is, as a rule, not always made formally explicit. In particular, direct objects may carry a pertinent morphological marking only under restricted conditions, a phenomenon termed *differential object marking* in Bossong (1985).

Even Turkish, in spite of its nearly perfect biunique relation between case forms and case functions, exhibits such an asymmetry. Direct objects take the accusative if a specific or definite reading is intended, as in *evi* ('the house') or *bir evi* ('a house [specific]'). Otherwise the nominative (or, more appropriately put, the unmarked base form) usually takes over as in *bir ev* ('a house [non-specific]'), see Kornfilt (1997: Ch. 2.1.1).

Similar procedures are adhered to in many languages. Markers appear when direct objects are to be distinguished that exhibit properties typically indicative of subjecthood otherwise (Lyons 1968: 294). This is true in particular if reference is made to animate beings (humans, in particular) or if the intended reading is specific or definite. Apparently, with other nominals used as direct objects, formal markings are more readily dispensable: if such nominals fill the object role, this agrees with expectations. In Latin, differential object marking separates genders. Neuter nouns never distinguish nominative and accusative, and, of course, neuters usually denote inanimates. As traditional treatments explain, a nominative-accusative distinction was not established in a class for which non-admittance of animate members was definitional.

It is true that the nominative-accusative distinction, if marked, is not immune to fall victim to phonological erosion. However, it has been observed that in such cases various compensating strategies of repair may take effect if the need arises. In Latin (Table 2), it is exactly in the (masculine) *o*-declension and, subsequently following suit, also in the *a*-declension that a coincidence of nominative and accusative plural (expected by sound laws) has been avoided. The conspicuously deviant pattern of nominative formation (*lupī, caprae*) has been taken over from the pronominal declension (Brugmann 1904: 390, § 479).

When formal markers are introduced or reintroduced that help tell direct objects from subjects, a path frequently taken is the adoption of morphological markers that are already in use for marking of objects. After the break-up of the

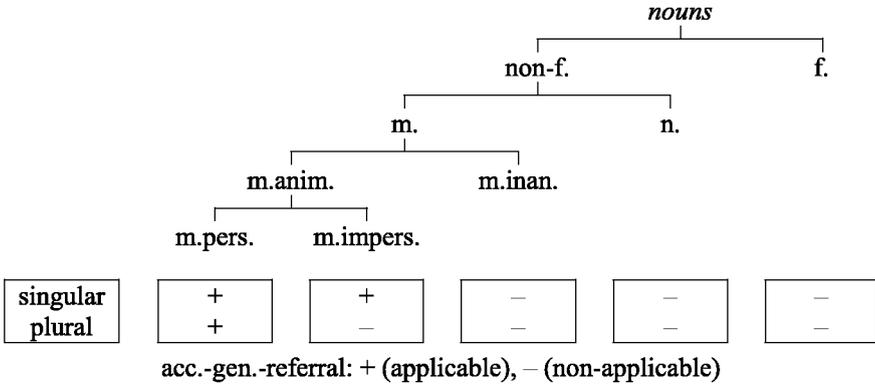
Latin case system, grammaticalized prepositions came into use as markers for syntactic relations. In Spanish, and similarly in other Romance languages, article-noun-groups (but not personal pronouns) normally remain unmarked as direct objects whereas the preposition *a* serves as a marker for indirect objects (as in *Doy el libro a Juan*, ‘(I) give the book to Juan’). However, in Spanish, this type of marking, which is primarily of a ‘dative’ nature, is also used to flag direct objects in case these serve for specific or definite reference to humans (as in *Veo a Juan*, ‘(I) see Juan’, vs. *Veo el libro*, ‘(I) see the book’). Thus, the formal differentiation of subjects and direct objects has been partly restored (for details see historical grammars, e.g., Hanssen 1910: 227, and, from a more theoretical point of view, Meillet 1921).

In Slavonic, the nominative-accusative distinction had been lost in various paradigms, including the singular of the major declension type of masculine nouns. But this distinction has been renewed though not unvaryingly, rather, as might be expected, to different degrees (Thomson 1909/12; for details see Laskowski 1986). First and foremost, the new accusative formations apply to humans, then also to animate beings in general. The path taken to reestablish the distinction resembles the one adopted in Spanish: the missing formal marking of the accusative was taken over from another objective case, viz., in Slavonic, the genitive. Polish inanimate masculine nouns do not possess special forms for the accusative. As in the nominative, the base form applies; cf. *dom*, nom.-acc.sg. of DOM (‘house’) in *Mam ładny dom*, ‘(I) have (a) nice house’. However, with designations of animates (except *a*-base nouns) it is the form otherwise used as a genitive that applies in the accusative, cf. *ślonia*, acc.-gen.sg. of SŁOŃ (‘elephant’) in *Widzę dużego ślonia*, ‘(I) see (a) big elephant’.

This relation of substitution (which may be accounted for by a ‘rule of referral’) is encountered in the accusative masculine in general, i.e., it is not restricted to nouns. Agreeing items such as adjectives are subject to this rule as well. When used in construction with animate masculines (in the singular), they change to the genitive form wherever an accusative is required, as the examples show; cf. *ładny*, nom.-acc. of ŁADNY (‘nice’) vs. *dużego*, acc.-gen. of DUŻY (‘big’). With regard to this rule of agreement, a subclassification of the masculine gender into so-called subgenera, viz. inanimate masculines (‘m.inan.’) and animate masculines (‘m.anim.’), has to be acknowledged in Polish (Meillet 1921: 208, “sous-genre”). These subgenera are true grammatical categories. Their extension does not coincide exactly with the corresponding semantic classes that lend them their names. What is, in semantic terms, inanimate may well fall into the class of animate masculine nouns grammatically.

It should be stressed that the Polish (and Slavonic) rule of acc.-gen.-referral does not present us with a case of a locally restricted adoption of markers

Table 6. Polish system of genders



(as exemplified by the special nominative plural formations in Latin referred to above). Rather, it applies to pronouns, numerals, adjectives and nouns in both singular and plural, which may exhibit quite different inflectional material. Whatever the relevant genitive form may look like and however it may be formed, it is taken over into the accusative if the conditions for applying the rule are fulfilled. With personal pronouns it even extends to inanimates.

The overall gender system of Polish may be set up as in Table 6; cf. Trubetzkoy (1934: 8) and Jakobson (1960) on Russian. In this system, a primary classification takes care of the distinction between non-feminine nouns and feminine nouns. The former class subdivides into two, masculine and neuter. Among masculines, animates and inanimates have to be distinguished. Finally, for Polish, a further subdivision is needed that distinguishes two subclasses of animate masculines: personal, viz. designations of male persons, and impersonal. This further subclassification is needed since it is only in the singular that the rule of acc.-gen.-referral holds for all of the animate masculines. By contrast, in the plural it is restricted to personal masculines.

As remarked by Laskowski (1989: 220), the homonymy of accusative and genitive forms, which is brought about due to differential object marking, is, as it were, “communicatively costless”, the two readings being readily distinguished in context. Actually, noun forms of the two cases may indeed stand in opposition when used as a non-partitive or a partitive direct object of a verb like *KUPIĆ* (‘buy’) as in *kupić cukier* vs. *kupić cukru* (‘to buy sugar/some sugar’). Of course, only inanimate nouns are likely to occur in the singular partitive construction. But then, these nouns do not exhibit the acc.-gen.-homonymy as they are outside the scope of the acc.-gen.-rule.

Another rule of referral is required to deal with vocative forms. In general, vocatives and nominatives may coincide (as, e.g., in most Latin declensions), especially in the plural of all genders and in the singular of neuters. In Polish, a distinction is called for only in the singular of masculines and of feminines. However, as it happens, part of the feminine nouns and most of the masculine nouns lack special endings for vocative marking. Again, as in the case of marked accusative forms that are missing, forms of another case stand in, here: locative forms.<sup>5</sup> Locative forms that substitute for vocatives in their turn may show various suffixes, viz. *-e*, *-u* (for masculines) and *-i* (for feminines). This fact points to a systematic relation that is not bound to individual endings (Johnston 1997: 62) but may be accounted for by a rule of referral, such rules being blind, as it were, with respect to the make-up of substitutes (as is the rule of acc.-gen.-referral).

#### 4. Functions of Polish case endings

##### 4.1. A two-level case system

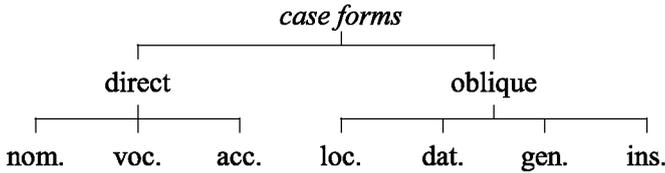
By the above considerations, the coincidence of nominative, vocative and accusative forms of the neuter in Polish (and related languages) would not appear to be due to ‘arbitrary’ homonymy. Assume, then, that what we are dealing with in such cases are in fact unitary forms, not sets of homonyms. If so, what should a proper treatment of such forms look like?

From a morphological point of view, case systems may be regarded as systems of classifications of forms of words. Polish has seven cases, thus, seven classes of case forms. On a most simple (and traditional) approach these classes would be given by a single classification on the basic set, i.e., by a ‘flat’ classification system. However, Trubetzkoy (1934), looking at Russian, set up a hierarchical system that starts from a primary division into two superordinate categories that he termed *direct* and *oblique*. Within these superordinate

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5. Reference grammars make use of a mechanism of referral when slots in paradigms are filled not by forms but by pointers such as ‘= loc.’. The possibility of a rule of voc.-loc.-referral for Polish is also considered in Cameron-Faulkner and Carstairs-McCarthy (2000: 825 n. 10). (Apart from *a*-base nouns like POETA, masculine vocative forms that differ from locative forms are restricted to a small group of nouns ending in *ec* as, e.g., OJCIEC, ‘father’, cf. *ojcu*, loc.sg., vs. *ojcze*, voc.sg., with an anomalous consonant shift *c* : *cz*. In addition there are isolated cases such as PAN, cf. *panu*, loc.sg., vs. *panie*, voc.sg.)

Table 7. A two-level case system



categories, traditional cases are identified as subcategories. Trubetzkoy's proposal may be adapted for Polish as shown in Table 7.

If we assume such a hierarchical case system, the nom.-voc.-acc.-forms of neuters referred to above may be classified plainly as *direct* case forms, and they may thus be given a non-ambiguous characterization (cf. also Williams 1994). Trubetzkoy's primary division, later on approved by Jakobson (1958), certainly plays a major role in a multitude of languages as may be gathered from the literature, and it fits into a general typology of syncretisms that has been elaborated in Baerman, Brown and Corbett (2005) and related publications on the basis of a representative sample of languages. As for Slavonic grammars, it is well established.

#### 4.2. Singular endings of non-feminines

While the quest for a hierarchical case system receives support from syncretism of direct cases, the gain is even higher if we turn to the oblique domain. Consider once more the endings of oblique cases in the singular of non-feminines. In Polish, there are five of them. Each of these endings is associated with a particular case except for the ending *-u*, which exhibits a seemingly arbitrary distribution. The ending *'-e* appears in the locative, *-owi* in the dative, *-a* in the genitive, and *-em* is an instrumental ending. It may be said that these endings specialize in a single case each. The ending *-u* appears in various oblique cases. Consequently, *-u* may be characterized provisionally as an unspecific (or 'plain') oblique ending. This can be done as the superordinate category *oblique* has been made available. Given this characterization, it is to be expected that *-u* appears whenever application of any more specialized ending is prevented for one reason or another.<sup>6</sup> Illustrative examples (to be discussed below) are

6. I assume a suitable version of the *principle of specificity* (or 'Elsewhere-principle', Kiparsky 1973); see Wiese (2004: 331, with references). The utilization of superordinate (or 'archi-') categories may be regarded as a more restricted analogue of the use of 'incomplete' specification or 'underspecification' (cf. Halle and Marantz 1993).

Table 8. Polish noun endings: the non-feminine singular inventory

		<i>case forms</i>						
		direct <i>base</i>			oblique <i>-u</i>			
		nom.	voc. = loc. m.	acc. = gen. m.anim.	loc. '-e	dat. -owi m.	gen. -a *m.inan.	ins. -em
m.anim., hard	<i>student</i>		'-e	-a	'-e	-owi	-a	-em
m.inan., hard	<i>cukier</i>		'-e	—	'-e	-owi	-u	-em
m.anim., hard, vel.	<i>biolog</i>		-u	-a	-u	-owi	-a	-em
m.inan., hard, vel.	<i>bank</i>		-u	—	-u	-owi	-u	-em
n., hard	<i>biuro</i>		—	—	'-e	-u	-a	-em
n., hard, vel.	<i>tango</i>		—	—	-u	-u	-a	-em
n., soft	<i>pole</i>		—	—	-u	-u	-a	-em
m.inan., hard, -a	<i>nos</i>		'-e	—	'-e	-owi	-a	-em
m.inan., soft, -a	<i>grosz</i>		-u	—	-u	-owi	-a	-em
m.anim., hard, *-owi	<i>kot</i>		'-e	-a	'-e	-u	-a	-em
m.inan., hard, -a, *-owi	<i>świat</i>		'-e	—	'-e	-u	-a	-em

*Conditions of application:*

m. (applicable to masculines only); m.anim. (applicable to animate masculines only); \*m.inan. (not applicable to inanimate masculines)

provided in Table 8. The table repeats the two-level case system introduced above. Names of case endings have been written into 'case boxes' where appropriate. In this way it is shown how endings are assigned their proper case specifications. The table also indicates pertinent conditions of application for endings. Restrictions on the use of case markers are form-based or function-based.

- i. Form-based restrictions relate to the interplay of endings and stem alternations, for which the division of nouns by stem type into hard-stem nouns and soft-stem nouns is basic. As indicated by the prime-sign, the locative ending '-e' always implies a stem alternation known as softening. Now, only a subset of noun stems allow for such an alternation. Soft-stem nouns in particular rule out softening. In the locative, non-feminine stems with velar offset, too, do not allow softening. Thus, applicability of this ending is heavily restricted. If '-e' is inapplicable, '-u' takes over.

- ii. Function-based restrictions basically relate to the role of the animacy hierarchy (or, more generally, the hierarchy of individuation) in case-marking. Among the oblique cases, dative and genitive are affected, these cases being used more frequently in reference to animates than are locative and instrumental.<sup>7</sup>

Dative is a case that is used preferentially in reference to animates, humans in particular. Hence, it may be expected that formally distinguished dative forms are primarily needed for lexemes that denote animates whereas on forms of lexemes not so used dative marking may be less well developed or even absent. Given the type of gender system found in Polish, the class of nouns concerned is the neuter, i.e., the inanimate gender *par excellence*. As a matter of fact, neuters do not employ the special dative ending *-owi* that occurs on masculines.<sup>8</sup> To account for this observation I posit a *condition of application* that restricts the dative ending *-owi* to masculines (as indicated by the subscript ‘m.’ in Table 8). Accordingly, neuters show *-u* in the dative.

In the genitive, too, nouns may or may not accept the pertinent specialized case ending (here: *-a*). In the latter case, the less specific ending *-u* will stand in. Once more, the split is related to the animacy hierarchy. Practically all nouns of the animate masculine subgender, i.e., nouns that employ acc.-gen.-referral, take *-a* in the genitive singular. Inanimate masculines for the most part do not form genitives in *-a* (for details see Orzechowska 1999: 306f.).<sup>9</sup> Thus two patterns stand out: (i) nouns like *STUDENT* add *-a* in the genitive (and do not distinguish genitive and accusative forms), (ii) nouns like *CUKIER* do not add *-a* (and distinguish genitive forms in *-u* from accusative forms, which are left without ending). As mentioned above, a formal distinction between accusative and genitive would be welcome for lexemes that may be expected to appear in both standard direct object constructions and partitive direct object constructions, and in fact, mass nouns form the hard core of this subclass.

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7. Laskowski (1989: 212f.), reporting on a (small) corpus of spoken Polish texts, provides the following frequencies for the oblique cases (in percentages of all occurrences of case forms in the corpus of animate and inanimate nominals, respectively). Animates: dat.: 12.4, gen.: 8.2, ins.: 3.8, loc.: 0.4. Inanimates: gen.: 26.3, loc.: 12.2, ins. 4.8, dat.: 0.0 (!).
8. As for cognate endings in Czech, Slovak and Ukrainian, the animacy hierarchy is also unquestionably identifiable as a major factor controlling their distribution (and diachronic spread), see Janda (1996: 170f.).
9. A split in genitive marking as found in Polish is found also in related languages (Janda 1996: 145). Russian even developed a division of two separate cases, genitive I – a general genitive – and genitive II – a partitive (Trubetzkoy 1934: 10).

A minority class of inanimate masculines, mainly count nouns, may compromise both patterns. This includes various designations of instruments and implements, among others. In general, these nouns do not undergo acc.-gen.-referral while at the same time their being used partitively (in the singular) is less likely. They show endingless accusatives along with genitives in *-a*. In a somewhat simplified analysis, such nouns may be handled as lexical exceptions. This said, the distribution of genitive formations will be accounted for by a condition of application that prevents the ending *-a* from being used with inanimate masculines (as indicated by the subscript ‘\*m.inan.’ in Table 8).

Neuters invariably take *-a* in the genitive. Avoidance of genitive-dative syncretism has been adduced in order to explain this distribution (Schenker 1964: 50). In general, non-feminines may lack either the special dative ending (*-owi*) or the special genitive ending (*-a*), but not both. (This follows as the domains blocked by the associated conditions of application are disjunct.) As envisaged, the above analysis of non-feminine endings puts into relief systematic asymmetries in case marking. The neuter subsystem is patently less differentiated than the masculine one, which adds vocative and accusative marking (controlled by animacy) as well as a special dative marker and an animacy split in the genitive. Only animate masculines may tap the full potential of the system.

Formal and functional restrictions take part in controlling the distribution of endings. Together with case specifications, they account for the variance between paradigms as may be gathered from an inspection of the sample nouns listed in Table 8. These exemplify eleven different distributions of endings. To begin with, consider the endings of oblique cases:

- STUDENT (‘student’) is an animate masculine from the class of hard-stem nouns (in the table: ‘m.anim., hard’). With nouns of this type, we encounter maximally developed paradigms. As a matter of fact, all of the four specialized oblique endings are present. Thus, the ending *-u* does not get a chance to apply.
- CUKIER (‘sugar’), being inanimate, does not accept the genitive ending *-a*. As predicted the plain oblique ending *-u* stands in.
- BIOLOG (‘biologist’) is a noun that cannot undergo softening before *-e* as its stem ends in a velar (indicated by ‘vel.’ in the table). Hence, the ending cannot apply and again, the plain oblique ending *-u* stands in.
- BANK (‘bank’) does not accept either the locative ending *-e* or the genitive ending *-a* according to the conditions discussed. Hence, in both positions it is *-u* that appears.

- BIURO ('office'), which is neuter, exhibits the plain oblique ending *-u* in the dative since neuters do not accept the special dative marker *-owi*, which is restricted to masculines.
- TANGO ('tango') and POLE ('field') are neuter and exhibit a hard velar stem and a soft stem, respectively. Aside from rejecting *-owi* (as do all neuters), they cannot add the ending *'-e* either (on account of their respective stem class membership). Thus, two of the oblique cases show the plain oblique ending *-u*.
- A few outliers deserve special mention. As noted above, the condition of application associated with the genitive ending *-a*, viz. *'\*m.inan.'*, may be violated with nouns from special groups, including various designations of body parts such as NOS ('nose'). Against the rule, such nouns may accept the ending *-a*. For this reason, they have to be treated as lexically marked (this is indicated in Table 8 by adding *'-a'* to the specification of the noun class). Significantly, there are considerable fluctuations to be found in this domain. The noun GROSZ ('penny') is another example of an inanimate masculine noun that does accept *-a*. Unlike NOS, GROSZ is a soft-stem noun. Thus, it does not take the locative ending *'-e*.
- The condition of application associated with the dative ending *-owi*, viz. *'m.'*, is rarely violated. Only a few nouns that should have it drop this ending and, for this reason, have to be considered as lexically marked; cf., e.g., KOT, m. ('cat'). This is indicated in Table 8 by adding *'\*-owi'* to the specification of the noun class. Once more, the ending *-u* stands in.
- The last example in Table 8, ŚWIAT ('world'), presents an isolated case, namely an inanimate masculine that does not accept the dative ending *-owi* but does add the genitive ending *-a*. It has to be treated as doubly marked in the lexicon. There are some more isolated cases and small groups including DOM ('house'), PAN ('mister, sir') and SYN ('son'). These three hard-stem nouns lack the locative ending *'-e*; again, *-u* stands in.

I return to the direct cases. As a rule, base forms of masculines are endingless, base forms of hard-stem neuters show the ending *-o*, and base forms of soft-stem neuters show the ending *-e*. (For perspicuity, base-form endings are not represented in Table 8.) As discussed with reference to neuter nouns, base forms figure as unspecific (plain) direct forms. In fact, there are no regular non-feminine endings that specialize in particular direct cases. Base forms are used throughout direct cases unless additional regularities intervene (as is the case with masculines only). Most importantly, this concerns the rule of referral for

‘missing’ marked accusative forms that are substituted by genitive forms, which has been described and motivated in Section 3, above. By another rule of referral, also discussed above, locatives may substitute for missing marked vocative forms. However, vocative marking is mostly optional and, if not applied, base forms stand in.

As discussed in Wiese (2004, with reference to Russian), referrals may be taken care of by setting up equations between sets of forms, which are given in Table 8 (in the table: ‘voc. = loc.’ and ‘acc. = gen.’) together with their relevant conditions of application (noted as ‘m.’, i.e., applies to masculines, and as ‘m.anim.’, i.e., applies to animate masculines). Applying these ‘rules of referral’, we complete the derivation of case forms in the non-feminine singular. Remaining vacant positions (marked as ‘—’ in Table 8) are filled by unaltered base forms. As may be read off the table, the distribution of endings is fully predictable given the specifications associated with the endings (including conditions of application), the classification of stems (including lexical markings where necessary, i.e., where needed to deal with exceptional cases), and the rules of referral (including their conditions of application).

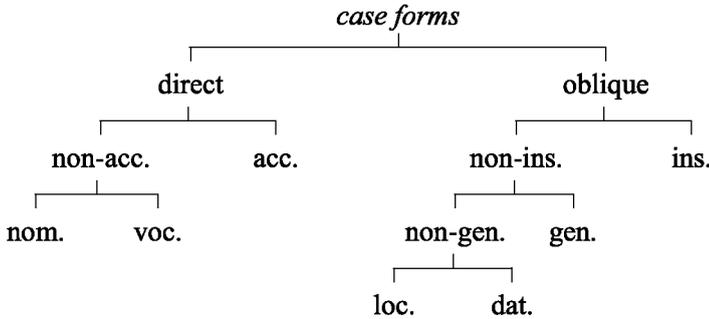
#### 4.3. A multi-level case system

The adoption of hierarchical classification systems provides a natural way to deal with systematic syncretism, defined as “the suppression of a relevant opposition under certain determined conditions” (Kuryłowicz 1964: 40). In fact, pursuing this idea further, it seems natural to adopt a multi-level system that replaces the two-level classification tentatively adopted above, as presented in Table 9.

In the domain of direct cases, absence of a distinction of nominative and vocative forms, which may be more or less extensive, is a familiar phenomenon both in Polish and beyond (as noted above for Latin). In a multi-level case system, this syncretism may receive a straightforward account if a binary subclassification of the category *direct* is assumed, comprising *non-accusative* and *accusative* (where non-accusative is the union of the subcategories nominative and vocative the distinction of which may or may not be formally reflected in a paradigm).

Trubetzkoy (1934: 8), in support of the direct-oblique-distinction, points out that, in Russian, the most simple, if anomalous, paradigms of words that have more than one inflectional form (viz., the numerals *SOROK* ‘40’ and *STO* ‘100’) possess just two forms, a direct one and an oblique one. Similarly, Polish numerals of the type exemplified by *PIĘĆ* (‘five’) make a distinction between a

Table 9. A multi-level case system



direct form *pięć* and an oblique form *pięciu*, which is not further specialized and hence may occur in all of the four oblique cases.

As a next step of differentiation within the oblique domain, a special instrumental form may be distinguished. Polish numerals do possess such forms (cf. *pięcioma*, instrumental of PIĘĆ), their use being optional. (Essentially the same situation is found in Russian pronouns such as ÈTOT, ‘this’, cf. *ètoj*, obl.sg.fem., vs. *ètoju*, ins.sg.fem., obsolete or optional.) Of course, in as far as such special instrumental forms are used at all, appearance of the general oblique forms will be restricted to the remaining non-instrumental subdomain of oblique cases (viz. locative, dative and genitive), which, in these paradigms, undergoes no further subdivision. Consequently, in a multi-level case system, a binary subclassification of the category *oblique* may be assumed, comprising *instrumental* and *non-instrumental* (where non-instrumental is the union of locative, dative and genitive). Among Polish nouns, such an opposition of instrumental forms and forms covering all of the remaining oblique cases is encountered in soft-stem feminines, cf. *ziemi*, loc.-dat.-gen.sg., vs. *ziemią*, ins.sg. of ZIEMIA (as well as between feminine forms of adjectives, cf. *białej*, loc.-dat.-gen.sg.fem., vs. *białą*, ins.sg.fem. of BIAŁY, ‘white’). Here, only the most marked oblique case in Polish (according to Laskowski 1989: 212) has a form of its own. The formal distinctions between the remaining oblique cases are ‘suppressed’.

As a further step towards a more elaborated partitioning of the oblique forms, hard-stem feminines show an additional distinction between forms that are restricted to the genitive (as, e.g., *lampy* of LAMPA) and forms covering both locative and dative (as in *lampie*). The latter may be characterized, in terms of the system presented in Table 9, as *non-genitive* forms (non-genitive being the union of locative and dative). A comparable pattern of distinctions is found with soft-stem neuters (and with velar hard-stem neuters as well). Oppositions

between genitive forms and less specific oblique forms may be found both inside and outside Slavonic. Compare, e.g., singular forms of Russian feminine nouns of the type *GORA* ('mountain'). Similarly, in Latin plural noun declensions, special genitive forms contrast with forms covering both ablative and dative (cf. Table 2, above).

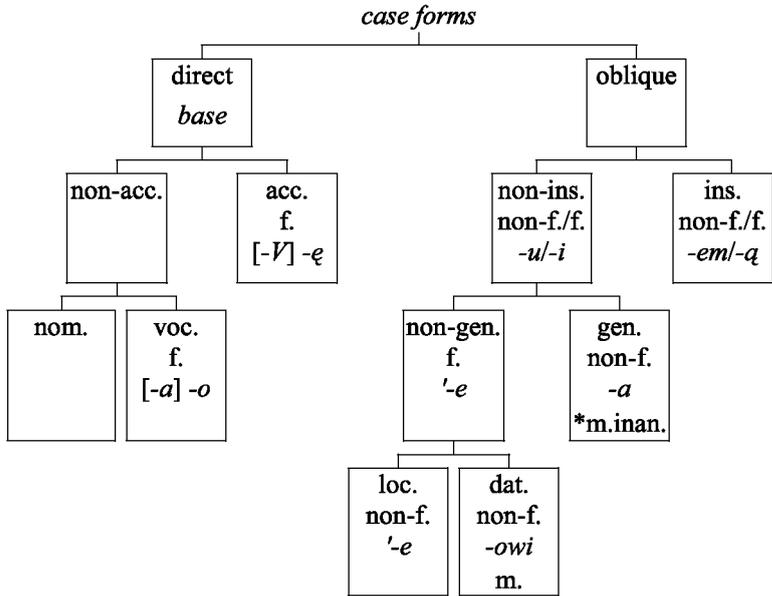
Among Polish nouns, the final step of subdividing the oblique singular domain, viz. the differentiation of locative and dative, is taken only in (most) paradigms of hard-stem non-feminines. Masculines, in particular, may distinguish specialized dative forms (in *-owi*), as discussed in the previous section. The weakness of the locative-dative-distinction does not come as a surprise, of course, both from a system-internal and from a comparative point of view, the Indo-European dative being "nothing else than an offshoot of the loc. used with personal nouns", as Kuryłowicz (1964: 190) put it. In Polish, the distribution of dative vs. locative is nearly complementary both semantically, i.e., with respect to (in-)animacy (cf. n. 7, above), and syntactically (the locative being a pure prepositional case while prepositions governing the dative are rare). Further subdivisions of the oblique domain are not present in Polish but are found in Russian (where locative and genitive each split into two subcategories). Overall, the degree of formal differentiation within different paradigms corresponds to relations of markedness between word classes (genders, in particular).<sup>10</sup>

Using a hierarchical system of classifications, categorial specifications of case endings may be optimized. As discussed above, a form such as *pole* (of *POLE*, n.), which shows the neuter base-form ending *-e*, may appear in the nominative, the vocative and the accusative. If higher-level case categories are available, no reference to single cases need be made. Thus, a categorial specification may be given that is not more specific than required. On the other hand, it may be expected that an adequate system of classification should provide for specifications that are, at the same time, not less specific than warranted by available evidence. As base-form endings are categorized as markers of the category *direct*, both requirements are accounted for. Such a specification is *optimal* as it is neither more nor less inclusive than can be justified by the data. A multi-level case system allows for further optimizations of case specifications. The ending *-u* has been treated above as an unspecific or plain oblique ending of the non-feminine singular. But, as noted, instrumental noun

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10. Adjectives and other declinables show additional types of syncretism discussion of which is beyond the scope of this paper, but cf. Wiese (2004) for an integrated approach to nominal, pronominal, and adjectival inflection in Russian that may be applied also to Polish.

Table 10. Polish noun endings: the non-feminine and feminine singular inventories



f., hard, [-a]	<i>lampa</i>	-o	-e	'e	'e	-i	-a
f., soft, [-a]	<i>ziemia</i>	-o	-e	-i	-i	-i	-a
f., soft, [-i]	<i>gospodyni</i>	= loc.	-e	-i	-i	-i	-a
f., soft, [-#]	<i>noc</i>	= loc.	—	-i	-i	-i	-a

forms in Polish always show special instrumental endings (in all genders and numbers). Given the multi-level case system presented in Table 9, we may optimize the case specification for the noun ending *-u*, which never appears in the instrumental, by changing it to *non-instrumental* (given that non-ins. = loc. ∪ dat. ∪ gen.).

#### 4.4. Singular endings of feminines

Table 10 repeats the multi-level case system introduced in the preceding section. Again, names of case endings have been put into the ‘case boxes’ where appropriate. Both, non-feminine and feminine endings are given in order to facilitate a comparison of the two inventories. Membership in either set is indicated above the endings’ names as ‘non-f.’ and ‘f.’, respectively. Case specifications and conditions of application for non-feminine endings are unchanged excepting only *-u*, as justified above. Notational conventions are as explained

for Table 8. Feminine stems are classified by reference to the base-form endings they take. These classes are indicated by ‘[-a]’, ‘[-i]’, and ‘[-#]’ (endingless) in the table.

Compared to the non-feminine, the feminine singular shows less variation between paradigms and also a reduced degree of differentiation between oblique cases (see the standard example paradigms repeated in Table 10 for convenience). This is in accordance with the status of the feminine as a marked gender. Among feminines, too, there are those that distinguish nominative and accusative forms as well as others that do not (cf. the paradigms of LAMPA, ZIEMIA, and GOSPODYNIA vs. the paradigm of NOC). The latter type, which is clearly the minority type, comprises soft-stem nouns that exhibit endingless base forms. It is true, the division between those feminines that do syncretize nominative and accusative and those that do not is not drawn according to animacy in the way observed for the masculine. But significantly, the syncretizing type of feminines is known to comprise nouns that denote inanimate objects along with numerous abstract nouns in *-oścé* but only a few animates (Damerau 1967: 38).

Unlike masculines, feminines achieve nom.-acc.-differentiation not by referral but by contrasting a special accusative ending (viz., *-ę*) with a characteristic base-form ending, viz., *-a* for the predominating type and *-i* for a smaller subclass. The fact that *-ę* is used only with nouns that show a vocalic base-form ending is indicated in the table by the notation ‘[-V]’, which precedes the name of the ending. In addition, feminines of the *a*-base type have at their command a special vocative ending *-o*, thus arriving at a fully differentiated set of direct case forms. In the table, the notation ‘[-a]’ indicates that the ending *-o* is restricted to *a*-base nouns. (As mentioned, there are also masculine *a*-base nouns such as POETA, which follow the feminine pattern in the singular, but not in the plural.) Feminines that do not accept the vocative ending *-o* follow the by now familiar rule of referral and switch to the locative form, cf., e.g., *nocy*, voc.sg. of NOC. (As it happens, for nouns of the type GOSPODYNIA the target form is still homonymous with the nominative.)

As for the oblique cases, there are three feminine endings (compared to five non-feminine ones). Once again, there is a rather unspecific ending that appears in three oblique cases (locative, dative, and genitive), viz. *-i*. It may be addressed as the feminine counterpart of the non-feminine ending *-u*. Accordingly, it is also assigned the specification *non-instrumental*. Again, the instrumental has a typical ‘nasal ending’ of its own, viz. *-q* (where *<q>* represents /*ǫ*/). Finally, in the feminine, too, the ending *-e* is used but its domain of application extends to the locative and the dative. Thus, it is appropriately assigned the case category *non-genitive*, which is provided by the multi-level

case system. Like its non-feminine counterpart, it is applicable only if the stem to which it is attached allows softening as in *lampie* of *LAMPA*, which is a hard-stem noun. (Note that in the feminine also velar-stem nouns allow softening before *-e* as in *nodze* of *NOGA*, ‘leg, foot’.)

As is easily verified, the given specifications of feminine singular endings (plus the voc.-loc.-referral) correctly predict the distribution of endings in the feminine sample paradigms when base forms of nouns (with their relevant features) are given. At the same time, syncretisms in these paradigms as well as interparadigmatic identities of endings between these paradigms are accounted for.

#### 4.5. Plural endings

Compared to the singular, the plural system is a simple one (see Table 5 for example paradigms). As for the direct cases, we find unitary forms, which cover the nominative, the vocative and the accusative. Moreover, subdifferentiation by referrals is reduced. The acc.-gen.-referral is restricted to personal masculines, while the voc.-loc.-referral does not apply. Hence, plural base forms (i.e., direct plural forms as found in the nominative plural) are used throughout the accusative and the vocative, excepting only the accusative of personal masculine nouns where genitive forms take over; cf., e.g., *generalów*, acc.-gen.pl. of *GENERAL* and *studentów*, acc.-gen.pl. of *STUDENT*.

However, formation of direct plural forms differs depending on two factors, viz. gender and stem type, as shown in Table 11, which provides case specifications and conditions of application for plural endings. (The hierarchical case system is assumed as before but not represented to save space.) The sign ‘|’ may be read as ‘otherwise’ as will appear from the following.

As familiar from related languages, there is a special direct plural ending for neuters, viz. *-a* (cf., e.g., *biura* of *BIURO*). In addition, there is a special ending for masculine honorifics (cf. *generalowie* of *GENERAL*), which form a subclass of masculine personal nouns (referred to as ‘m.hon.’ in the table). Here, competing formations serve to mark distinctions on the hierarchy of individuation.

Table 11. Polish noun endings: the plural inventory

direct	loc.	dat.	gen.	ins.
<i>-a</i>   <i>-owie</i>   <i>~e</i>   <i>'-i</i>   <i>-i</i>	<i>-ach</i>	<i>-om</i>	[ <i>-#</i> ] <i>~i</i>   <i>-ów</i>	<i>-ami</i>
n.      m.                      m.				
hon.                      pers.			m.	

For the bulk of nouns the default plural suffixes apply, which are *-e* and *-i* for soft-stem nouns and hard-stem nouns, respectively. In the table, I use a tilde prefixed to the ending (as in: ‘~*e*’) in order to indicate that this ending applies to soft-stem nouns only (cf. *ziemie* of ZIEMIA). Otherwise, direct case forms add *-i*, orthographically <*i*> or <*y*>, (as in *cukry* of CUKIER) with the proviso that personal masculines change to their softened stem alternants (as indicated again by the prime sign, cf. *studenci* of STUDENT). A special group, not yet accounted for by the specifications given in the table comprises a subset of soft-stem feminines with endingless base forms (including nouns ending in *-ość* in particular, e.g., *trudności*, dir.pl. of TRUDNOŚĆ, ‘difficulty’). These do not accept the *-e* typical of soft-stem nouns but fall into the domain of the general default plural ending *-i* (cf. also *mysz* + *-i* > *myszy*, dir.pl. of MYSZ). Nouns of this group as well as further exceptions have to be treated in terms of lexical marking.

There is no syncretism among oblique cases in the plural. Here every ending specializes in a single case, and for three cases there are endings that apply globally (*-ach*, loc.; *-om*, dat.; and *-ami*, ins.) as discussed above. It is only the genitive that exhibits competing formations (in *-i*, in *-ów*, and endingless) whose distribution is controlled by stem class and gender and also by the make-up of base forms. As a rule, the genitive ending *-i* applies only to soft-stem nouns (as indicated by ‘~*i*’ in Table 11) that possess an endingless base form (indicated by ‘[-#]’). This holds for feminines such as *NOC* (cf. *nocy*, gen.pl.) as well as for masculines such as *SŁOŃ* (cf. *słoni*, gen.pl.). Otherwise, masculine nouns add *-ów* (cf., e.g., *studentów* of STUDENT and *cukrów* of CUKIER). But of course, under these conditions, for most feminines and neuters neither of these two endings will be an option. Hence, their genitive forms remain endingless (cf., e.g., *biur*, gen.pl. of BIURO, n., and *ziem*, gen.pl. of ZIEMIA, f.). As usual, there are classes of exceptions to this overall pattern as well as some idiosyncrasies and much variation (see Swan 2002: 46, 74–76, 113). For instance, both neuters ending in *um* (like MUZEUM) and masculines ending in *c* (like PLAC) usually take *-ów*; on the other hand, a group of soft-stem neuters take *-i* (cf., e.g., *POPOŁUDNIE*).

## 5. Conclusion

In the preceding analysis of Polish noun inflection, the focus has been on a (multi-level) system of case classifications that allows setting up *optimal specifications* for case markers, viz. case specifications that are neither more specific nor less specific than can be justified by the actual distribution of forms.

Once such specifications have been made available, the effective foundation of paradigm construction is revealed. Sometimes grammarians seem to be inclined to treat the various Polish noun declensions as monolithic blocks, which may, at best, be fitted into a more or less well arranged taxonomy. However, if an analysis is pursued that examines the functions of endings one by one, the seemingly arbitrary multiplicity of declensions gives way to a confined inventory of markers that follow comparably simple and traceable rules of distribution.

Not counting base-form endings, we arrive at a total of ten singular endings, five feminine ones and five non-feminine ones. In addition, there is about the same number of plural endings. This rather manageable inventory is supplemented by two rules of referral for the vocative and the accusative. As a result, given the base forms of nouns and their characteristic properties, the distribution of forms over paradigms is predictable on the basis of the specifications that are associated with the endings (including conditions of application).

Remarkably, case specifications of endings hold for all pertinent paradigms, including even irregular ones that drop or add particular endings against the general rules. As exemplified, there are various irregular paradigms that differ only in the set of endings they select from the general inventory – just as regular ones do. Differences in selection do not affect the functions of endings. Their values (specified in terms of case marking) are invariable across paradigms.

As has been pointed out, with respect to endings, distinct paradigms often differ in only a small number of places or even in one position only, for instance in the locative singular (as do *BIURO* and *TANGO*). Such massive interparadigmatic identities must not be ignored, nor may be cases of systematic syncretism. In agglutinative morphology (as in Turkish) each ending is associated with a full functional specification ‘on a standalone basis’. On the other hand, by the system of declensions of traditional Latin grammar, endings are tied to paradigms outside of which they do not have, as it were, a life of their own. Polish exemplifies a state of affairs that is located between such extremes. A number of case endings are specialized markers for one and only one case, and they cross paradigms. But in contradistinction to Turkish there are other case endings (such as *-u*) that by themselves are not sufficient to determine which case a word form so marked belongs to, cf., e.g., *cukru* (of *CUKIER*), which ‘is’ genitive, and *biuru* (of *BIURO*), which ‘is’ dative. To establish the functions a form can have, the competition between forms, hence the interplay between forms in paradigms, has to be taken into account. But, given the relevant sets of ‘morphemes’, here: the inventory of noun endings (together with conditions of application and rules of referral), it turns out that paradigms are derivable and, then, so are the eventual functional values of noun forms.

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