

Why *dwóch panów przyszło*, but *dwaj panowie przyszli* and *dwie kobiety przyszły*? Agreement with Quantified Subjects in Polish versus Russian and Bosnian/Croatian/Serbian*

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Abstract: In Russian, agreement with quantified subjects varies between plural (= semantic) and singular (= grammatical, default, impersonal) agreement, and there is ample evidence that this variation is governed by semantic and pragmatic factors (such as topicality and animacy of the subject). Although Bosnian/Croatian/Serbian follows stricter normative rules, variation does occur and is motivated similarly to Russian. Polish seems at odds with the paradigm of these languages. First, the grammar of contemporary Polish does not allow for variation in agreement with quantified subjects. Second, semantic agreement is available only with non-virile nouns in paucal numbers, while virile nouns require grammatical agreement (e.g., *dwie kobiety przyszły*_{PL} ‘two women came’ but *dwóch mężczyzn przyszło*_{SG} ‘two men came’). This paper offers a way to integrate the Polish data into the Russian and Bosnian/Croatian/Serbian picture by drawing on historical and contemporary empirical evidence. Specifically, it offers a short analysis of variation between the nominative and oblique masculine forms of paucal numbers (*dwaj* vs. *dwóch*).

Keywords: semantic agreement, grammatical agreement, non-canonical subjects, differential subject marking, oblique subjects, quantified subjects, number phrases, Russian, Bosnian/Croatian/Serbian, Polish, *dwaj* vs. *dwóch*

1. Introduction

Numeral phrases are special in many languages, and this is particularly true of the Slavic language family. One phenomenon typical of languages all over the world is a grammatical distinction between the lowest few numbers and all higher numbers (e.g., Heine 1997: 32–34), as is characteristic of Slavic, where

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the two sets of numbers evolved from different sources and show different morphosyntactic patterns up to the present day.

This paper is concerned with agreement resolution in phrases with quantified subjects (henceforth, QSs)—i.e., in phrases whose subjects include a noun quantified by a number. More precisely, the paper addresses the question of why variation between plural (semantic) agreement and singular (default, invariant, impersonal)¹ agreement is regularly available in Russian, marginally available in Bosnian/Croatian/Serbian (henceforth, BCS), and absent from Polish. The following examples illustrate the variation observable in Russian (1a–e)², BCS (2a–b), and Polish (3a–b):³

(1) Russian

- a. Izvestno, skol'ko čelovek pogiblo na «Titanike»
known how.many people died_{N.SG} on Titanic

‘It is known how many people died on the Titanic.’

(*Kolekcija anekdotov*, 1970–2000)

- b. [Š]est' čelovek pogibli, šestnadcat' propali
six people died_{PL} sixteen disappeared_{PL}

bez vesti.
without news

‘Six people have died, sixteen have disappeared without a trace.’

(“Blogi”, *Russkij reporter*, 2012)

- c. Imeetsja dve kučki kamnej.
has_{3SG.REFL} two piles stones_{GEN}

‘There are two piles of stones.’ (*Sbornik olimpiadnyx...*, 2016: 127)

- d. V Tuve šest' otmorozkov ubili suprugov v
in Tuva six thugs_{GEN} killed_{3PL} couple_{ACC} in

ix že kvartire.
their PART apartment

‘Six thugs killed a couple in their apartment in Tuva.’

(“V Tuve šest'...”, *A42.RU*, 2019)

¹ As noted by Marušič and Nevins (2010: 315), grammatical agreement with QSs is actually “failure to agree at all”.

² Examples (1a–b) were retrieved through the Russian National Corpus.

³ Grammatical glosses follow the Leipzig Glossing Rules, with the addition of the following abbreviations: ACT—active; ENUM—enumerative (a special enumerative form, the so-called *brojna forma* of masculine nouns with paucal numbers in BCS); NONVIR—non-virile gender; VIR—virile gender.

- (1) e. Každýj god mnogo devušek i ženščin
 every year many girls_{GEN} and women_{GEN}
 nadevajut ètot kostjum.
 put.on_{3PL} this costume
 ‘Every year, a lot of girls and women wear this costume.’
 (*Sneguročka* + 1, 2019)

(2) BCS

- a. Došle (došla) su četiri mudre
 came_{FEM.PL} came_{ENUM} AUX_{3PL} four wise
 žene (mudra muškarca).⁴
 women_{NOM.PL} wise_{ENUM} men_{ENUM}
 ‘Four wise women (men) came.’
- b. Došlo je pet mudrih žena (muškaraca).
 came_{N.SG} AUX_{3SG} five wise women_{GEN.PL} men_{GEN.PL}
 ‘Five wise women (men) came.’

(3) Polish

- a. Przyszły trzy kobiety / psy
 came_{PL.NONVIR} three_{NOM/ACC} women_{NOM} dogs_{NOM}
 ‘Three women/dogs came.’
- b. Przyszło trzech mężczyzn
 came_{N.SG} three_{GEN/ACC} men_{GEN/ACC}
 ‘Three men came.’

Russian shows variation in grammatical versus semantic agreement with paucal (2, 3, 4) and non-paucal (≥ 5) numbers⁵, with a tendency towards plural agreement with paucals and default singular agreement with non-paucals and unspecific quantifiers. The factors underlying this variation are understood quite well. By and large, the likelihood of plural agreement increases along with the subject-like semantic and pragmatic properties of the QS (such as animacy, topicality, etc.). BCS has a stricter set of rules for paucal versus non-paucal numbers, with semantic agreement in the paucal, and grammati-

⁴ As in other Slavic languages, masculine nouns in BCS have a special form (*brojna forma*) with paucal numbers. Cf. also footnote 6.

⁵ Marušič and Nevins (2010) refer to non-paucal numbers as “5&UP”—a label that has been taken up by other researchers (e.g., Willim 2015).

cal (impersonal) agreement in the non-paucal.⁶ However, variation is observable in BCS as well, as will be shown in Section 3. Polish has the strictest set of rules with respect to the resolution of agreement with Qs. With paucal numbers, semantic agreement is available (and obligatory) for non-virile nouns, and for the rarely used nominative virile forms (*dwaj, trzej, czterej* ‘two, three, four’), while grammatical agreement is obligatory for the oblique forms of paucal numbers (*dwóch, trzech, czterech* ‘two, three, four’) with virile nouns. Non-paucal numbers impose grammatical agreement by default, regardless of the gender of the quantified noun or of the semantic and pragmatic subject-like properties of the QS.

The choice of languages discussed here is not accidental. First of all, these languages represent the eastern, western, and southern groups of Slavic languages. Moreover, the three languages represent a continuum with respect to the resolution of agreement with Qs, with Russian (and all of East Slavic) showing the greatest variation between semantic and grammatical agreement (Corbett 2004: 215; Suprun 1969: 179), significantly less variation in BCS⁷ (Corbett 1983: 147; Corbett 2004: 215), and almost no variation tolerated in Polish and other West Slavic languages (cf. Corbett 2004: 215; Suprun 1969: 200). The situation in Polish poses a challenge for functional analysis along the lines established for the analysis of QS agreement resolution in Russian (e.g., Corbett 1983: 136–56; Robblee 1993; Schlund 2018: 149–55) and, to a lesser extent, in BCS (Schlund 2019). This is because semantic agreement is available only for paucal numbers of non-virile nouns (3a) in Polish, but unavailable for the paucal numbers of virile nouns (3b). If anything, one would expect semantic agreement to combine more easily with virile nouns because virile nouns are semantically more salient and come closer to the subject prototype of a (male) human agent (Janda 1999: 201).

⁶ Russian and BCS have a special morphological pattern for masculine nouns in the paucal that evolved from the dual but is synchronically identified as a genitive singular or as a special enumerative form. In Russian, the special form is restricted to the noun phrase, whereas it extends over the participle in the perfect tense in BCS:

(i) Russian

Pribyli	dva	učenika.
arrived _{PL}	two	pupils _{ENUM}

(ii) BCS

Stigla	su	dva	učenika.
arrived _{ENUM}	AUX _{3PL}	two	pupils _{ENUM}

Both: ‘Two pupils arrived.’

⁷ The South Slavic languages do not represent a homogeneous group in this respect. Bulgarian and Macedonian have generalized semantic/plural agreement over all numbers, whereas Slovene uses the dual and plural with paucal numbers and the singular with non-paucal ones (Corbett 2004: 215).

Sections 2 and 3 briefly revisit the factors governing variation between semantic and grammatical agreement with Qs in Russian (§2) and BCS (§3). Section 4 sketches the origins of Slavic numbers and the historical development of their agreement with Qs. Section 5 is dedicated to Polish and focuses on three questions: (1) Why is there no variation in QS agreement resolution in contemporary Polish? (2) Which factors govern the variation in morphological forms of virile paucal numbers between the oblique form requiring default agreement and the (now only rarely used) nominative form requiring plural agreement (e.g., *trzech panów przyszło* vs. *trzej panowie przyszli* ‘three gentlemen came’)? (3) What is the morphosyntactic status of the oblique virile forms—that is, what is their morphological case and what kinds of subjects are they (canonical, non-canonical, or oblique; cf. Seržant 2013; Schlund 2018)?

In search of answers to these questions, I will first give an overview of the historical resolution of agreement with Qs in general (§5.1) and then focus on the evolution of the virile numbers (§5.2). Section 5.3 explores the variation between oblique and non-oblique types of virile Qs in contemporary Polish. Section 5.4 argues for an analysis of the more frequent oblique type as oblique subjects, though with a full range of behavioral subject properties. This will help to explain why semantic agreement is unavailable precisely with virile Qs in paucal numbers, despite the fact that the semantic properties of virile nouns arguably resemble those of a prototypical subject more closely than those of non-virile nouns.

2. Variation in Agreement with Qs in Russian

Russian Qs show variation in whether they prompt singular (= grammatical, impersonal, default) or plural (= semantic) agreement. A huge body of research⁸ on this topic has established the following factors influencing QS agreement resolution in Russian (Corbett 1983: 142–56):

- Animacy of the QS favors semantic agreement.
- Preverbal position of the QS favors semantic agreement.
- Paucal numbers (< 5) tend towards semantic agreement
- Non-paucal numbers (≥ 5) and unspecific indications of quantity (e.g., *neskol’ko* ‘some’, *mnogo* ‘many’) tend towards grammatical agreement.

Schlund (2018: 149–55) argues that the factors favoring semantic agreement in Russian boil down to the semantic and pragmatic properties of prototypical subjects. Semantically, a prototypical subject is an agent, and a prototypical semantic agent is not only animate but also human, an actor, and in full con-

⁸ Suffice it here to refer to some studies of Corbett (1983, 2004, 2010) and to the summary of factors given in Franks 2009: 358.

trol of the event described by the predicate. Pragmatically, a prototypical subject is a topic, and topics typically occur in pre-verbal position. Example (1c) cited previously is a case in point. The subject is non-topical and inanimate, which is why grammatical agreement occurs although the number of referents is only two. Example (1d), on the other hand, contains a highly agentive subject, which is why it can receive semantic agreement although the number of referents is five.

A prototypical subject is also a clearly distinguishable entity in that it has an individual referent. Paucal numbers themselves resemble the subject prototype in the sense that we can intuitively and immediately distinguish the number of entities we see (or imagine) only in numbers up to five, in general. Also, we easily construe two, three, or four actors as a group of individual entities. In other words, the actors are still more salient than their number. This saliency is directly reflected in the grammar: paucal numbers are modifiers, functioning like attributive adjectives. Our ability to conceive of a number of entities as individual entities decreases as the number increases. The human ability to intuitively discern the number of entities in a group (i.e., to subitize)⁹ decreases with non-paucal numbers. This corresponds to the grammatical behavior of non-paucal numbers, which, having developed from nouns, originally functioned as heads of quantified phrases and governed the counted entities.

The variation between semantic and grammatical agreement with Russian Qs is also reflected in the syntactic behavior of these subjects. While Qs inducing semantic agreement usually display all behavioral subject properties, Qs inducing grammatical agreement are more restricted.¹⁰ Although all kinds of Russian Qs can be syntactic subjects (i.e., they can answer the question of *kto_{NOM}/čto_{NOM}* 'who/what'), some of them, particularly those with unspecific quantifiers and non-paucal numbers, do not bear nominative case. These Russian Qs can be classified as non-canonical subjects, differing from canonical ones in that they lack morphological subject properties (nominal

⁹ Subitizing, or more precisely, perceptual subitizing, is the ability to know how many entities are in a small set without actually counting. There is also conceptual subitizing, which denotes the ability of "recognizing smaller groups within a larger set and adding those small groups together, such as two dots plus two dots equals four dots, or three dots and three dots makes six dots" (Levin, n.d.).

¹⁰ An illustrative case in point is a classic example from Franks 1995: 121, in which the binding of a reflexive pronoun is possible only in combination with semantic agreement:

- (i) Pjat' ženščin smotreli / ??smotrelo na sebja.
 five women_{GEN} looked_{PL} / looked_{N.SG} on self
 'Five women looked at themselves.'

case marking and agreement with the verbal predicate¹¹), while at the same time functioning as subjects syntactically (Seržant 2013: 320; Schlund 2018: 123).

There is one rule about QS agreement resolution in Russian that deserves special attention. When a QS is preceded by the demonstrative pronoun *èti* ‘these’, plural agreement is obligatory.¹² As shown by examples (4) and (5), the rule applies even when the subject is inanimate and occurs with a non-paucal number (the subject of (4) is also in non-topical position):

- (4) Nedavno postroeny i èti sem' domov.
 recently built_{PL} and these seven houses_{GEN.PL}

‘These seven houses were also built recently.’

(Rozental', Džandžakova, and Kabanova 2005: 465)

- (5) I èti 20 minut okazalis' samye
 and these 20 minutes_{GEN.PL} turned.out_{PL} only_{NOM.PL}
 ščastlivye za stol' dlitel'noe vremja.
 happy_{NOM.PL} for so.much long_{NOM} time_{NOM}

‘And these 20 minutes turned out to be the happiest ones for a very long time.’

(*Sneguročka + 1*, 2019)

The demonstrative pronoun *ètot* ‘this’ increases the referentiality of the counted noun. A QS within a determiner phrase with the demonstrative *ètot* thus gains in its resemblance to a prototypical subject. It is noteworthy, though, that the prototypical subject property of animacy (and, associated with it, agentivity) is not decisive here, since the rule applies even to the inanimate subjects of passives (4) and of unaccusative verbs (5).

¹¹ Of course, agreement resolution (semantic or grammatical) varies depending on the subject properties outlined above.

¹² Note that this rule does not apply when the demonstrative and the number appear in reverse order. In that case, the demonstrative receives genitive-case marking and both singular and plural agreement become available (also Franks 1995: 101):

- (i) Sem' (iz) ètix domov postroeny/o nedavno.
 seven (of) these_{GEN.PL} houses_{GEN.PL} built_{PL/SG} recently

‘Seven of these houses were built recently.’

This example also illustrates the point made above. The reverse order of the demonstrative and the number yields a slight decrease in referentiality since a specific number of items is singled out of a larger unit. This explains why singular default agreement becomes available. Note that the sentence is more acceptable when *iz* ‘of’ is included.

3. Less Variation in Agreement in BCS

In BCS the agreement behavior of a QS is normatively determined. The rule states that grammatical (= impersonal, default) agreement is obligatory for non-paucal numbers and unspecific quantifiers such as *nekoliko* ‘some’, *malo* ‘few’, and *mnogo* ‘many’. Paucal numbers require either plural agreement or agreement in a specific masculine enumerative form that originated from the now lost dual (see example (2) on p. 223). Deviation from this rule is rare but does occur, and it is likewise influenced by animacy and word order (Corbett 1983: 146–50; Schlund 2019). Examples (6), (7b), and (8b) illustrate deviations from the rule, cases in which plural agreement occurs in combination with a non-paucal QS:

- (6) Naših 5 momaka su bez problema
 our_{GEN.PL} 5 boys_{GEN.PL} AUX_{3PL} without problems
 prošli u 3. k[rug] takmičenja.
 passed_{M.PL} in 3rd round competition_{GEN}
 ‘Our five boys entered the third round of the competition without any problems.’
 (Schlund 2019: 177)

- (7) a. Sedam boraca ISIL-a, šest žena i 12 djece
 seven fighters of_ISIL six women and 12 kids
 stiglo u BiH
 arrived_{N.SG} in BiH
 ‘Seven IS-fighters, six women, and twelve children have arrived in Bosnia-Herzegovina.’

- b. Šest žena i 12 djece, po dolasku na
 six women and 12 kids after arrival at
 Međunarodni aerodrom Sarajevo su prošli
 international airport Sarajevo AUX_{3PL} passed_{M.PL}
 odgovarajuće provjere od strane Granične
 according checks from side border_{ADJ}
 policije BiH [...].
 police BiH

‘Upon arrival at the Sarajevo International Airport, the six women and twelve children passed the appropriate checks conducted by the Herzegovinian border police.’

(“Grupa bh. državljana vraćena iz Sirije”, *Etleboro.org*, 2019)

- (8) a. Najstarije na svijetu: Ovih pet žena
 oldest_{NOM.F.PL} on earth these_{GEN.PL} five women_{GEN.PL}
 rođeno je u 19. stoljeću
 born_{N.SG} AUX_{3SG} in 19th century
 ‘Oldest in the world: These five women were born in the 19th century’
 [headlines of a newspaper article]
- b. Ovih pet dama znaju tajnu [...].
 these_{GEN.PL} five ladies_{GEN.PL} know_{3PL} secret
 ‘These five ladies know a secret...’
 (“Najstarije na svijetu”, *Klix*, 2015)

According to the rule, there should be default singular agreement in all these examples because the numbers involved are greater than or equal to five. However, semantic (i.e., plural) agreement occurs in (6), (7b), and (8b). All of the QSs in examples (6–8) are animate and function as the topics of their clauses, but only the subjects of (6) and (8b) can be assigned the semantic role of agent. Therefore, agentivity cannot be the crucial factor allowing for semantic agreement in (7b), which is lower in agentivity. What seems to be important, though, is that the subjects in (7b) and (8b) are definite. The definiteness of the subjects in (7b) and (8b) anaphorically relate to their first mention in the text. The definiteness of the QS in (7b) is clarified in the English translation, which obligatorily includes the definite article. Definite and possessive contexts increase referentiality, and it seems that this increase is crucial for the possibility of semantic agreement with QSs in BCS. This finds a correlate in the rule that QSs preceded by the definite pronoun *ètot* require semantic agreement in Russian (cf. §2). QSs in BCS can also be classified as non-canonical subjects in the sense of Seržant 2013 and Schlund 2018; non-canonical subjects function as syntactic subjects and display behavioral subject properties (e.g., binding reflexive pronouns, raising) but may or may not induce agreement of the predicate.

4. A Glance at the Diachrony of Agreement with QSs

Slavic paucal numbers originally functioned as attributes, agreeing with the nouns they quantified (Suprun 1969: 172). In Proto-Slavic, QSs with *dvva* (m.) / *dvvě* (f./n.) ‘two’ and *oba* (m.) / *obě* (f./n.) ‘both’ required dual agreement, whereas QS with *troje* (m.) / *tri* (f./n.) ‘three’ and *četyre* (m.) / *četyri* (f./n.) ‘four’ required plural agreement (Suprun 1969: 61, 142; Gvozdanović 1999: 187f.). Non-paucal numbers were historically feminine *i*-stem nouns¹³ (Suprun 1969:

¹³ An exception was *desetb* ‘ten,’ originally a masculine noun that later adapted to the feminine *i*-stem declension of the number nouns *petb* ‘five’ through *devetb* ‘nine’

171), governing the case of the noun they quantified. As in modern Russian, BCS, and Polish, non-paucal numbers imposed a (partitive) genitive plural on the nouns they quantified. The fact that the non-paucal numbers originated from nouns also explains why they grammatically required singular agreement. However, for the impersonal (singular neuter) form of the finite predicate to combine with non-paucal numbers as syntactic subjects, it was necessary for the non-paucal numbers to gradually lose their morphological status as (feminine) nouns.¹⁴

The difference in the morphosyntax of smaller versus larger numbers is grounded in human perception. The larger a set of counted entities, the less it is possible (or necessary) to focus on the individual entities included in the set (see Siuciak 2008: 16; Garncarek 2018: 79). With large numbers, our focus naturally switches to the numerical value itself, which is why larger numbers are more “noun-like” than lower numbers (see Corbett 2004: 217). Very large numbers still behave like nouns even in the modern Slavic languages.¹⁵ Paucal numbers, on the other hand, are modifiers of the quantified noun, with the noun remaining the focus of attention.

Suprun (1969: 171f.) assumes that there was fluctuation in agreement resolution, particularly of non-paucal Qs, in Slavic early on. However, in Old Church Slavonic, our oldest available written evidence, agreement with paucal numbers was consistently in the plural and dual, respectively, whereas singular agreement prevailed with non-paucal numbers (Corbett 2004: 215).¹⁶ It is

(Suprun 1969: 61f.). Moreover, big numbers belonged to other declension classes (e.g., *sto* ‘hundred’).

¹⁴ It is therefore more adequate to distinguish three possible kinds of agreement with Qs in Slavic: semantic agreement (*congruentia ad sensum*) in the plural; truly grammatical agreement (*congruentia ad formam*; referred to as syntactic agreement by Miechowicz-Mathiasen 2013), that is, singular feminine agreement reflecting the gender of the noun denoting the non-paucal number; and default agreement (3N.SG) (cf. Miechowicz-Mathiasen 2013: 81). However, since the original grammatical agreement vanished very early, I use the terms grammatical agreement, singular agreement, and default agreement synonymously. Example (i)—from *Biblia Leopoldy* (1561)—illustrates one of the rare instances of original grammatical agreement from historical Polish data:

- | | | | |
|-----|----------------------------------|---------------------------------|----------------------|
| (i) | siedem | kłosów | wyrastała |
| | seven _{NOM.SG} | ears.of.wheat _{GEN.PL} | grew _{F.SG} |
| | ‘seven ears of wheat have grown’ | | |
- (Łoś 1928: 98)

¹⁵ For example, Polish *tysiąc* ‘thousand’ tolerates both singular masculine and default—that is, singular neuter—agreement (Miechowicz-Mathiasen 2013: 97).

¹⁶ Corbett’s (2004: 215) data do not indicate whether singular agreement was in the (original) feminine gender or in the neuter.

therefore more likely that singular agreement was dominant with non-paucal numbers also in Proto-Slavic.

5. Polish: No Variation, No Motivation?

Polish, like the other West Slavic languages, shows very little variation in the agreement resolution of Qs (Suprun 1969: 200; Corbett 2004: 215). Non-paucal numbers and unspecific quantifiers impose default agreement, regardless of the gender of the quantified noun, or of any semantic or pragmatic factors. See, for example, (9–10) below:

- (9) Siedem psów zaatakowało trzy wilki.
 seven dogs_{GEN.PL} attacked_{N.SG} three_{ACC} wolves_{ACC}
 ‘Seven dogs attacked three wolves.’

- (10) w tym pokoju śpi osiem kobiet/
 in this room sleep_{3.SG} eight_{NONVIR} women_{GEN.PL}
 ośmiu mężczyzn.
 eight_{VIR} men_{GEN.PL}
 ‘There are eight women/eight men sleeping in this room.’

Qs with paucal numbers behave differently, depending on the gender of the quantified noun. Contemporary Polish has two genders in the plural: virile and non-virile. Qs with non-virile nouns require semantic agreement, as in (11). Importantly, and somewhat unexpectedly, virile nouns do not induce semantic agreement. Instead, the default neuter singular is obligatory, as in (12). This is because paucal virile Qs carry accusative-genitive morphology although they are syntactically subjects. The question is thus not merely why singular agreement is obligatory with a virile Q in the paucal, but also where the oblique case marking originates:

- (11) Trzy psy zaatakowały wilka.
 three dogs_{NOM.PL} attacked_{PL.NONVIR} wolf_{ACC}
 ‘Three dogs attacked a wolf.’

- (12) Trzech chuliganów zdemolowało samochody.
 three_{GEN/ACC} hooligans_{GEN.PL} demolished_{3N.SG} cars_{ACC}
 ‘Three hooligans demolished cars.’

Table 1 on the following page gives an overview of QS agreement resolution in contemporary Polish.

Table 1. QS agreement resolution in contemporary Polish

	Paucal	Non-Paucal
Non-Virile Gender	plural agreement	default agreement
Virile Gender	default agreement	default agreement

This fact of Polish grammar is difficult to integrate into the analysis developed on the basis of Russian and BCS and the historical information outlined above. After all, there is no reason to assume that Qs with non-virile nouns make semantically more prototypical subjects than Qs with virile nouns. Rather, one would assume that it would be the other way around, with virile nouns more closely resembling prototypical subjects than non-virile nouns (cf. Janda 1999: 201).¹⁷

Interestingly, there exists an alternative paucal form for virile nouns that is in the nominative case and induces semantic agreement, namely the forms *dwaj, trzej, czterej* mentioned in the introductory part of this paper. From a purely formal perspective, it is possible to change every instance of an oblique paucal subject with a noun of the virile subgender into its non-oblique counterpart. Predicate agreement, then, obligatorily switches from neuter singular to virile plural, as in (13) as compared to (12):

- (13) Trzej chuligani zdemolowali samochody
 three_{VIR.NOM} hooligans_{NOM} demolished_{VIR.PL} cars_{ACC}
 ‘Three hooligans demolished cars.’

The nominative form is hardly discussed in studies on QS agreement resolution in contemporary Polish. This is probably due to the somewhat obsolete character of these forms (cf. Długosz-Kurczabowa 2003, s.v. *dwa*). However, and as will be shown in more detail in Section 5.3, the nominative paucal numbers in the virile gender do occur in contemporary texts as well. The question is when the nominative virile paucal forms may still be favored over their (now dominating) oblique counterparts and how the two parallel sets of forms developed. Before addressing these questions, we will first take a look at QS agreement resolution in earlier stages of Polish and at the historical development of the virile paucal numbers in particular.

¹⁷ This appears to be the case in Slovak, where virility triggers plural agreement also with numbers higher than five (Suprun 1969: 179).

5.1. Historical Agreement with Non-Paucal Qs in Polish

Miechowicz-Mathiasen (2013: 82–87) provides empirical evidence that agreement with non-paucal Qs fluctuated in Polish between plural and (neuter) singular agreement between the 15th and 17th centuries, with a vanishingly low proportion of singular feminine agreement (one instance out of 777 Qs) in the oldest sources she analyzes.¹⁸ Her data also indicate an increase in singular neuter agreement over the investigated time period, from 1455 to 1632 (ibid. 87).

Since Miechowicz-Mathiasen (2013) is not concerned with factors underlying variation between singular and plural agreement with Qs, she does not distinguish the Qs found in her data with respect to animacy or agentivity, word order, or other factors. The following examples illustrate the range of variation. They were either taken from Miechowicz-Mathiasen 2013 or, when the historical text source is given, directly from the texts.¹⁹ In these latter cases, the examples were not collected through a structured and exhaustive corpus analysis but rather retrieved by cursory queries for numbers in the respective texts.

Some examples (14–18)²⁰ suggest that animacy and preverbal (topical) position played a similar role as in contemporary Russian and, to a minor extent, contemporary BCS:

- (14) *dziesięć żon piec będą w jednym piecu chleby*
ten wives_{GEN.PL} bake_{INF} will_{3PL} in one stove bread_{ACC.PL}
 ‘ten wives will bake bread in one stove’

(Miechowicz-Mathiasen 2013: 83)

- (15) *sześć set mężow [...] stali przed drzwiami*
six hundred_{GEN.PL} men_{GEN} stood_{M/VIR.PL} in.front door_{INST.PL}
 ‘six hundred men stood before the door(s)²¹’

(Miechowicz-Mathiasen 2013: 86)

¹⁸ These sources are the *Biblia królowej Zofii* (Bible of Queen Sofija; 1455) and the *Rozmyślanie przemyskie* (Przemysł meditation; ~1450).

¹⁹ These texts were accessed through the *Korpus tekstów staropolskich* (corpus of Old Polish texts, KTS).

²⁰ Example (14) appears in the *Biblia królowej Zofii*, while (15) and (17) are taken from the *Biblia Gdańska* (1632).

²¹ *Drzwi* ‘door’ is a plurale tantum also in modern Polish.

- (16) pięć mądrych nabrały oleju w swoje lampy, ale
 five wise_{GEN.PL} took_{NONVIR.PL} oil in their lamps but
 pięć szalonych [...] nie wzięły oleju z sobą
 five foolish_{GEN.PL} [...] not took_{NONVIR.PL} oil with them
 ‘the five wise virgins put oil in their lamps, but the five foolish ones
 did not take oil with them’ (Rozmyślanie przemyskie: 487, via KTS)
- (17) z rzeki wychodziło siedem krów
 from river stepped.out_{N.SG} seven cows_{GEN.PL}
 ‘seven cows were stepping out of the river’
 (Miechowicz-Mathiasen 2013: 85)
- (18) Szło też s nim piędziesiąt poczesnych mężow...
 went_{3N.SG} also with him fifty honorable_{GEN.PL} men_{GEN.PL}
 ‘With him went fifty honorable men...’
 (Rozmyślanie przemyskie: 115, via KTS)

All of the Qs above are animate. Those in preverbal position induce plural agreement (14–16); the two examples in postverbal position display singular agreement (17, 18). However, not all illustrative examples given by Miechowicz-Mathiasen (2013) adhere to this pattern. For instance, in the following two almost identical examples from the *Biblia Brzeska* (1563), one displays singular and the other one plural agreement without obvious reason:

- (19) było siedem braciej
 was_{N.SG} seven brothers_{GEN.PL}
 ‘there were seven brothers’ (Miechowicz-Mathiasen 2013: 86)
- (20) byli tedy siedem braciej
 were_{M/VIR.PL} then seven brothers_{GEN.PL}
 ‘then there were seven brothers’ (Miechowicz-Mathiasen 2013: 86)

Variation was also available with inanimate Qs. Typically, inanimate Qs showed default agreement in post-verbal position but could also trigger plural agreement:

- (21) było tam sześć sądow kamiennych
 were_{N.SG} there six courts_{GEN.PL} stone_{ADJ.GEN.PL}
 ‘there were six courts made of stone’
 (Rozmyślanie przemyskie: 208, via KTS)

- (22) były tam sześć stągiew kamiennych
 were_{NONVIR.PL} there six waterpots_{GEN.PL} stone_{ADJ.GEN.PL}
 'there were six waterpots made of stone'
 (Miechowicz-Mathiasen 2013: 83)²²

The following examples, however, seem to be motivated:

- (23) potem kiedy czternaście niedziel minęło
 then when fourteen weeks_{GEN.PL} passed_{N.SG}
 'then, when fourteen weeks had passed'
 (Rozmyślanie przemyskie: 12, via KTS)

- (24) sześć dni są, w które mamy robić
 six days are_{3PL} in which have_{1PL} work_{INF}
 'there are six days in which to work'
 (Rozmyślanie przemyskie: 376, via KTS)

Time data typically trigger singular agreement. This is because time data are bad candidates for prototypical subjects (even in preverbal position) and, as in the above case, tend to convey background information (note that example (23) is a subordinate clause). In (24), on the other hand, the QS is the center of attention and does not function as a specification of time but as the subject of an existential sentence.

Siuciak (2008: 175–88) provides converging evidence for these observations, noting that singular default agreement with non-paucal numbers was becoming ever more frequent from the 16th century onwards. Importantly, she also notes that semantic agreement was more persistent with virile nouns (*ibid.* 186).

With the paucal numbers *trzy* 'three' and *cztery* 'four' and non-virile nouns, plural agreement was the norm, as illustrated in (25):

- (25) a na tem drągu były czaszki cztery
 and on that stick were_{NONVIR} skulls_{NOM.PL} four
 'and there were four skulls on that stick'
 (Biblia królowej Zofii, Exodus 37:20, via KTS)

²² This example comes from the *Biblia Brzeska*.

5.2. The Rise of the Paucal Virile Numbers

5.2.1. Late Old Polish²³

In Late Old Polish the virile subgender had not yet developed. Importantly, the genitive-accusative syncretism of virile nouns in the plural began precisely with numeral phrases (Miechowicz-Mathiasen and Dziubała-Szrejbrowska 2012: 2; Miechowicz-Mathiasen 2013: 89).²⁴ The first instances of genitive-accusative syncretism are attested in the dual²⁵ (15th c.), and they expanded into the plural in the course of the 16th and 17th centuries (cf. Miechowicz-Mathiasen and Dziubała-Szrejbrowska 2012: 6, and the references therein).

To find out when the specific virile, nominal, and oblique forms of the paucal numbers emerged, we searched the *Korpus tekstów staropolskich* (corpus of Old Polish texts, *KTS*). By the middle of the 15th century, we still find the masculine form *dwa* also with virile nouns, and when in syntactic subject posi-

²³ I assume the traditional periodization of Polish: Old Polish: ca. 1150–ca. 1500; Middle Polish: ca. 1500–ca. 1780; Modern Polish: since 1780 (Klemensiewicz 2002).

²⁴ One reason why the new accusative syncretic with the genitive entered into the plural domain precisely with numeral phrases could be that the genitive was already present here with non-paucal numbers early on (Miechowicz-Mathiasen and Dziubała-Szrejbrowska 2012: 6–8). Examples such as (i), in which the counted entity precedes the paucal number, might have been particularly favorable for the dissemination of the genitive-accusative syncretism into the plural:

- (i) Wybierzcie wy mężów lepszych a mocniejszych
 choose_{2PL} you_{2PL} men_{GEN/ACC} best_{GEN/ACC} and strongest_{GEN/ACC}
 dwanaście.
 twelve
 ‘You choose twelve of the best and strongest men.’

(*Rozmyślanie przemyskie*: 756, via *KTS*)

Typically, the number precedes the counted noun in numeral phrases, e.g., *dwanaście mężów* ‘twelve men’. However, and particularly in spoken language, the counted noun may also precede the number—e.g., *widzę mężów dwanaście* lit. ‘I see men twelve’. This inverse structure may arise due to human perception and focus of attention. Sometimes, we first perceive men (particularly when they appear in high numbers) and only then try to estimate their number. Therefore, we add the number only after the noun to be counted. This is also why in Russian the pre-position of the counted noun yields an estimate, not an exact number (e.g., *desjat’ sobak* ‘ten dogs’ vs. *sobak desjat’* ‘roughly ten dogs’). It is not implausible that instances of post-position of the number favored the spread of the genitive-accusative syncretism in numeral phrases with virile nouns.

²⁵ That the dual was affected by genitive-accusative syncretism before the plural has been explained by the fact that the intrusion of genitive-accusative syncretism started in the singular (Siuciak 2008: 85, and the references therein).

tion, with a predicate agreeing in the dual or plural (cf. (26) and (27) below). At the same time, the old accusative ending for non-virile and virile nouns that is syncretic with the nominative (e.g., *miecze* ‘swords_{NOM/ACC}’ and *wszystki męże* ‘all_{NOM/ACC} men_{NOM/ACC}’) was largely preserved, as illustrated in (27):

- (26) *aczby wadziła sie [sic] męża dwa*
 when quarrel_{M.DU} REFL men_{NOM.DU} two_{NOM.M}
 ‘when two men quarrel’ (*Biblia królowej Zofii*, Exodus 21:22, via KTS)

- (27) *dwa syny Jakobowa Symeon a Lewi [...]*
two_{NOM.M} sons_{NOM/ACC.DU} Jakob_{POSS} Symeon and Lewi [...]
wziąwszy miecze szli do miasta a
take_{PST.PTCP.ACT} swords_{ACC} went_{M/VIR.PL} to town and
zbiłasta wszyscy męże
killed_{M.DU} all_{ACC} men_{ACC}
 ‘two of Jakob’s sons, Symeon and Lewi, having taken their swords,
 went to the town and killed all the men’
 (*Biblia królowej Zofii*, Genesis 34:25, via KTS)

When virile nouns combined with the other paucal numbers, three and four, they consistently imposed plural agreement on the predicate:

- (28) *wtenczas, czteryze krolowie w żydowskiej ziemi*
at.that.time four_M kings_{NOM.PL} in Jewish land
krolowali
ruled_{M/VIR.PL}
 ‘at that time, four kings ruled in the Jewish land’
 (*Rozmyślanie przemyskie*: 401, via KTS)

The form *czteryze* used in (28) is a relic of the inherited masculine form **četyre*. Interestingly, the sentence following directly after example (28), given here as (29), renders the number four already as *czteryzy*:

- (29) *czteryzy krolowie w żydowskie [sic] ziemi byli*
four kings_{NOM.PL} in Jewish land were_{M/VIR.PL}
 ‘there were four kings in the Jewish land’
 (*Rozmyślanie przemyskie*: 401, via KTS)

Historically, *czteryzy* derives from the syncretic form of the feminine and neuter genders (**četyri*), which gradually entered the masculine paradigm. In the

There are no virile Qs with the oblique forms *dwóch*, *trzech*, and *czterech* in the Old Polish corpus. This means that the oblique forms must have penetrated into the subject domain later than the 15th century.

5.2.2. The 17th and 18th Centuries

There is no digital corpus comparable to the *KTS* available for the 16th century. Therefore, to find out when the oblique virile forms started creeping into the subject domain, research was conducted in the *Elektroniczny korpus tekstów polskich z XVII. i XVIII. wieku (do 1772 roku)* (electronic corpus of Polish texts from the 17th and 18th centuries (until 1772)), also referred to as the “Baroque corpus”, covering the years 1601–1772 (Kieraś and Woliński 2018: 3854).

For the purposes of this study, only the manually annotated part of the corpus (containing around 511,000 segments²⁹) turned out useful, as the automatically annotated corpus contained too many false positive cases of virile Qs. Fortunately, the oblique forms in subject position are tagged as nominatives in the corpus, which is why it has been possible to find all the paucal virile Qs tagged as such in the manually annotated corpus by means of a simple morphological query³⁰. In this way, 49 instances of virile Qs in paucal numbers were retrieved. Table 2 summarizes the absolute frequencies of the relevant forms.

Table 2. Frequencies and earliest attestations of nominative and oblique virile Qs with paucal numbers in the manually annotated part of the *Elektroniczny korpus tekstów polskich z XVII. i XVIII. wieku*

Type	Token Frequency
<i>dwaj</i>	16
<i>trzej</i>	15
<i>czterej</i>	3
<i>dwóch</i>	6
<i>trzech</i>	4
<i>czterech</i>	5

²⁹ As of 6 July 2020.

³⁰ The exact syntax of the query was [case = “(nom)” & orth = “exact form of the number”, e.g. “dwóch”].

The earliest attestation of *dwaj* dates to the first year of the corpus, 1601. This means that the form must have emerged in the course of the 16th century, which is plausible in light of the fact that the forms *trzej* and *czterej* are attested already in the 15th century (cf. §5.2.1).

The earliest attestations of virile paucal Qs in the oblique case date from the second half of the 17th century, with *dwóch* being the oldest attestation in the corpus. The source of this first instance of a virile QS with *dwóch* was written between 1656 and 1688, so the exact date of its occurrence is unclear. The example reads as follows:

- (34) Trzej tylko dragani strzelili spadło
 three_{NOM.VIR} only dragoons_{NOM} shoot_{PST.VIR.PL} fall_{PST.N.SG}
 tamtych z koni dwóch naszego też
 those_{GEN.PL} from horse two_{GEN/ACC.M} our_{ACC} also
 jednego postrzelono w szyję.
 one_{ACC.M} shot_{PST.PTCP} in neck
 ‘Only three dragoons were shooting: two of theirs fell from their horses, one of ours was also shot in the neck.’

The frequencies given in Table 3 on the opposite page show that agreement resolution was not as clear-cut as it is today. There were hybrid cases with a number in the nominative combining with a noun in the genitive plural and yielding grammatical agreement, as in (35), or with an oblique form imposing semantic agreement, as in (36):³¹

- (35) Byłem przy jednej nad którą czterej Doktorów siedziało
 was_{1SG.M} with one on who four_{NOM} doctors_{GEN.PL} sit_{N.PST}
 ‘I was at a woman’s who had three doctors sitting with her’ (1680)
- (36) Obrazek na którym Sodoma gorejąca, nad którą
 picture_{NOM} on which Sodom burning on which
 aniołów dwóch ogień spuszczają, w ramach
 angels_{GEN.PL} two_{GEN.VIR.PL} fire_{ACC} let.down_{3PL} in frames
 gładkich, złocistych
 smooth golden
 ‘A picture in a smooth golden frame showing the burning Sodom, on which two angels are dropping fire’ (1696)

³¹ Siuciak (2008: 191) also gives some examples of such hybrid constructions.

Table 3. Agreement resolution of virile quantified subjects with paucal numbers in the manually annotated part of the *Elektroniczny korpus tekstów polskich z XVII. i XVIII. wieku*

Type	Singular Agreement	Plural Agreement	No Finite Predicate Available
<i>dwóch</i>	4	2	0
<i>trzech</i>	1	1	2
<i>czterech</i>	2	0	3
<i>dwaj</i>	0	14	2
<i>trzej</i>	2	9	5
<i>czterej</i>	1	2	0

It could be that the first instances of virile QSs in the newly emerging oblique forms were less prototypical subjects in the sense outlined in Section 2. The first example of an oblique form functioning as subject, given in (34) above, is the subject of an unaccusative verb (*dwóch spadło* ‘two fell’) and is thus low in agentivity. Interestingly, this first oblique virile QS retrieved from the corpus follows a highly agentive paucal QS occurring in the nominative and with semantic agreement (*trzej_{NOM} dragani_{NOM} strzelili_{PL}*).

Indeed, most of the 15 instances of oblique virile QSs found in the data are intransitive and some even semantically unaccusative, but the number of examples is just too small to draw any further-reaching conclusion from this. There is also an instance of an agentive, referential QS in preverbal position with the oblique form *dwóch* (although with plural agreement, which may be interpreted as reflecting its subject-like properties). This example dates, however, from the middle of the 18th century and is thus decidedly younger than example (34):

(37) [MACEDONES waleczny Naród w Macedonii, których]

dwóch Królów, Filip i Aleksander ad summum
two_{ACC} kings_{GEN} Filip and Aleksander to highest
Sławy culmen podnieśli³²
glory summit raised_{VIR.PL}

[‘The Macedonians are a bellicose people in Macedonia, whom] two kings, Filip and Aleksander, raised to the crest of glory’

³² The insertion of Latin words (*ad summum culmen*) is typical of this text (*Nowe Ateny* 4, 1756) and other historical Polish texts.

Given the small number of examples, I must leave the question of whether less typical Qs introduced the oblique virile forms earlier than more prototypical Qs to future studies, which should also take into account sources from the 16th century.

There is no continuous diachronic corpus of Polish available at present (Król et al. 2019). In particular, there is no corpus available covering the 58 years between the end of the Baroque corpus (1772) and the *Korpus tekstów polskich z lat 1830–1918* (Kieraś and Woliński 2018: 3854). As of June 2020, the *Korpus tekstów polskich z lat 1830–1918* includes varied samples of 1,000 texts. The automatically tagged part includes 1.3 million words; its manually annotated part includes 600,000 words (Witold Kieraś, p.c.).

The search for nominative and oblique virile Qs in this corpus did not yield any more hybrid examples—that is, instances of oblique Qs with plural agreement and nominative Qs with singular agreement, as attested occasionally in the Baroque corpus. This finding is indicative of a consolidation of the system.

Table 4 below summarizes the results of the search for paucal virile Qs in nominative and oblique forms in the *Korpus tekstów polskich z lat 1830–1918*. Due to the small size of the corpus, the informative value of these numbers is limited. However, as compared to the previously investigated stage in Table 3, in Table 4 oblique forms are in an almost even distribution with the nominative forms, already slightly outnumbering the latter.³³

Table 4. Agreement resolution of quantified virile subjects with paucal numbers in the *Korpus tekstów polskich z lat 1830–1918*

Type	Token Frequency
<i>dwóch</i>	36
<i>trzech</i>	8
<i>czterech</i>	7
<i>dwaj</i>	35
<i>trzej</i>	7
<i>czterej</i>	5

³³ Note that the numbers provided in Siuciak 2008: 193, to which I got access only recently, are very much in line with the data given here.

- (39) a. Dwóch policjantów z Tych jest
 Two_{GEN/ACC} police.officers_{GEN/ACC} from Tychy is
 podejrzanych o pobicie bezdomnego.
 suspected_{GEN/ACC} PREP beating homeless_{ACC}
 ‘Two police officers from Tychy are suspected of beating a
 homeless man.’
- b. Dzisiaj rano dwaj policjanci z
 today morning two_{NOM} policemen_{NOM} from
 Komendy Miejskiej w Tychach zostali_{VIR.PL}
 police.station municipal in Tychy became
 zatrzymani
 detained_{VIR.PL}
 ‘This morning the two policemen from the Tychy Municipal Police
 Station were detained [...]’
 (“Na Śląsku zatrzymano dwóch policjantów”, *naTemat*, 2020)

In both examples, the oblique forms occur in the first mention of the QS in the text, that is, in (38b) and (39a). The nominative forms are used only in subsequent mentions—in (38c) and (39b). This is reminiscent of QSs in Russian and BCS, where an increase in referentiality (for instance, by the introduction of a definite pronoun) makes semantic agreement available.

To establish whether contexts of increased referentiality—as signaled by the occurrence of a definite pronoun in the QS—favor the use of the nominative forms, a search in the corpus of modern Polish (National Corpus of Polish, NKJP; cf. Przepiórkowski et al. 2012) was conducted. The queries included three supposedly frequent virile nouns (*pan* ‘mister’; *mężczyzna* ‘man’; *chłopak* ‘young man, boy’). Each of these nouns was once combined with the nominative and once with the oblique paucal form in the query. Importantly, the queries included the definite pronoun *ten* ‘this’ in the corresponding forms (i.e., *ci*_{NOM.VIR.PL} and *tych*_{ACC/GEN.VIR.PL}). For example, for the paucal number two, one search was conducted for each of the nouns with *ci dwaj panowie/mężczyźni/chłopaki*, and one search for *tych dwóch panów/mężczyzn/chłopaków*. All the results were checked manually to make sure only syntactic subjects were included. Figure 1 (opposite) summarizes the absolute frequencies of nominative and oblique forms from all 18 queries.³⁵ With all three paucal numbers, the nominative forms are clearly favored in noun phrases with the demonstrative pronoun *ten*. To make sure that this result was not due to an over-representation of nominative forms in the data, it was compared with the overall frequencies of

³⁵ Three nominative and three oblique forms for each noun = (3 + 3) × 3 = 18 queries altogether.

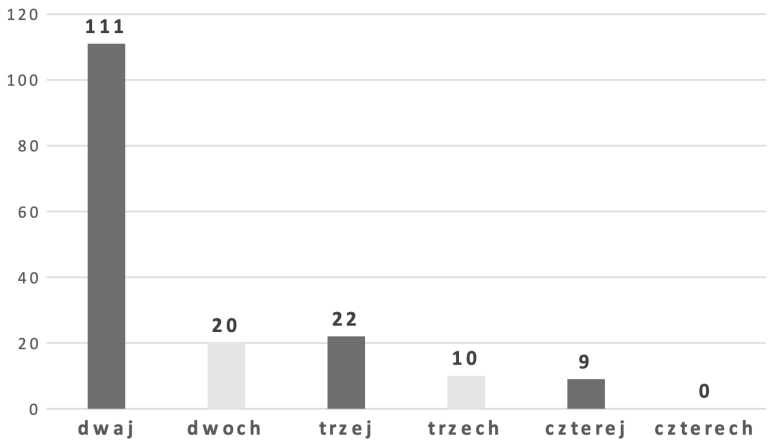


Figure 1. Token frequencies of nominative and oblique virile paucal numbers in definite noun phrases with three virile nouns in the NKJP (syntactic subjects only, 1,800M segments)

the nominative and oblique paucal forms in the manually annotated sub-corpus of the NKJP. Table 5 below shows that oblique paucal forms are generally more frequent in the manually annotated part of the corpus. This reflects the fact that the oblique forms are ousting the nominative forms in contemporary Polish. The overall dominance of the oblique forms underlines the meaningfulness of the finding that the nominative forms still dominate precisely when combined with a demonstrative pronoun, i.e., in contexts of increased referentiality. Against the background of this finding, the variation between *dwaj* and *dwóch* can be interpreted as a case of pragmatically motivated differential subject marking.

Table 5. Overall frequencies of nominative and oblique paucal virile forms in the manually annotated sub-corpus of the NKJP (approx. 511,000,000 segments)³⁶

Type	Token Frequency	Type	Token Frequency
<i>dwóch</i>	63	<i>dwaj</i>	39
<i>trzech</i>	39	<i>trzej</i>	11
<i>czterech</i>	9	<i>czteryj</i>	1

³⁶ I owe thanks to Witold Kieraś from the Institute of Computer Science of the Polish Academy of Sciences, Warsaw, for providing this information.

Another domain where the nominative forms seem more resistant are pure nominations, as, for instance, in titles of novels or movies—*Trzej muszkieterowie* (the three musketeers) and *Dwaj bracia* (two brothers)—or pieces of art—*Dwaj mężczyźni kontemplujący księżyc* (two men contemplating the moon), the title of a drawing by Caspar David Friedrich. This use of the nominative form is reminiscent of Jakobson's (1936/1971) classic account of the nominative case as representing the pure naming function ("Träger der reinen Nennfunktion", emphasis in original, *ibid.* 33).³⁷ Importantly, though, this can be no more than a tendency as the oblique forms are also available in these contexts (cf. the Polish translation of the movie *Three Men and a Baby*: *Trzech mężczyzn i dziecko*).

5.4. What Case is *dwóch/trzech/czterech*, and What Kinds of Subjects are Qs in Polish?

So far, the forms *dwóch/trzech/czterech* have been referred to simply as "oblique forms" as opposed to the nowadays less frequent nominative forms. It remains to determine the morphological case of these forms. The discussion of this question has a long tradition in Polish linguistics but will be summarized here with relative brevity.³⁸

One possibility is simply analyzing the oblique forms as nominative when they occur in subject position. This is the stance taken in the annotations of Polish corpora. While this practice has been very convenient for the purposes of this study, it is unsatisfying in theoretical terms to treat the nominative and oblique forms identically. There are two other options available. One is to analyze the virile oblique forms as genitives and the non-virile non-oblique forms as nominatives. This has become known as the nominative-genitive hypothesis (*hipoteza mianownikowo-dopełniaczowa*; Przepiórkowski 2004). The other option is to analyze the oblique virile forms as accusatives. This has the advantage of a unified treatment of virile and non-virile paucal numbers in subject function, namely as accusatives, which is why this position is also referred to as the accusative hypothesis (*hipoteza biernikowa*; Przepiórkowski 2004).

³⁷ As mentioned in footnote 27, Siuciak (2008: 190) notes that the first attestations of virile forms in the nominative were in contexts of mere nomination of quantities ("zdania o charakterze konstatacji liczbowych"). Against this background, the functional retreat of the nominative forms is at the same time a retreat to the domain where they originated.

³⁸ See also overviews given by Przepiórkowski (2004) and Klockmann (2012: 37–42; 2017: 137–40).

The accusative analysis seems to have the greatest number of adherents, not only recently, but also across time (e.g., Łoś 1928; Suprun 1969: 84³⁹; Franks 1995: 131–35; Rutkowski 2000; Przepiórkowski 2004; Miechowicz-Mathiasen 2012; Citko, Germain, and Witkoś 2018: 33–37; Witkoś et al. 2018; Witkoś 2020).⁴⁰ It is also the position adopted in this paper. Formalist and synchronically oriented papers have put great effort into the derivation of this accusative, for instance, by assuming a silent preposition assigning accusative case (see Lyskawa 2020). Such a solution is, however, unsatisfying in both theoretical and diachronic terms. First, the assumption of zero elements should be a last resort—a fact acknowledged in most theoretical frameworks, particularly within the vast body of functionally oriented frameworks with which this study is associated. Second, it is totally unclear how a silent, accusative-assigning preposition might have arisen diachronically.

Works including a diachronic perspective have assumed that the origin of the accusative is an accusative of measure (*biernik miary*) that was extended from quantifiers of nominal origin to numbers (e.g., Łoś 1928; Przepiórkowski 2004; Miechowicz-Mathiasen 2013). An example in point is *trochę* ‘a bit’, which is a fossilized accusative of the now vanished noun *trocha* ‘small piece’ (e.g., Herda 2019: 28). Other instances are the adverbials *odrobinę* ‘a bit’ and *masę* ‘a lot’, which can still be used as nouns (*odrobina* ‘a small piece’; *masa* ‘mass’) up to the present day. This idea receives further plausibility in light of the fact that the accusative case is particularly frequent with expressions of quantity (we usually say how much of something we have or want; both contexts imply that the possessed or desired object or substance occurs as a direct object). Accordingly, Łoś (1928: 101) assumes the evolution of *trochę* ‘a bit’ illustrated in (40) on the following page:

³⁹ Suprun (1969: 84) only suspects that *dwóch* might be an accusative rather than a genitive, but he makes the interesting point that replacement of a nominative by an accusative is not restricted to number expressions (prominent examples are the Russian feminine nouns *svekrov'* ‘mother-in-law’ and *cerkov'* ‘church’, which were originally accusatives of *ũ*-stem nouns). Cf. also examples (41–43) on p. 249.

⁴⁰ It should be noted that some authors assume the accusative analysis only with respect to non-paucal numbers in both genders, leaving out the question of what is the case of the virile non-paucal oblique forms (e.g., Miechowicz-Mathiasen 2013; Lyskawa 2020). Although we are concerned here mainly with the non-paucal oblique virile forms, the accusative analysis has the advantage of allowing for a unified analysis of both plural genders (virile and non-virile), and of all numbers, be they paucal or non-paucal.

- (40) dał mi trochę cukru >
 gave_{M.SG} me_{DAT} a.bit/a.small.piece_{ACC} sugar_{GEN}
 było trochę cukru
 was_{N.SG} a.bit_{ADV} sugar_{GEN}
 ‘he gave me a bit (= a small amount) of sugar’ > ‘there was a bit of
 sugar’ (Łoś 1928: 101)

The question is whether the grammaticalization of nominal quantifiers corresponds to the chronology established for the first attestations of virile oblique non-paucal QSs in Section 5.2. More precisely, the grammaticalization of nominal quantifiers must already have been in process when the first attestations of the virile oblique non-paucal QS occurred.

Herda (2019) traces the origin of the three indefinite quantifiers of nominal origin *trochę*, *odrobineę*, and *małą*. The oldest of these quantifiers is *trochę*, whose earliest attestation as an adverbial extent modifier⁴¹ dates from the 15th century (Herda 2019: 28–30). As established in Section 5.2.2, the oldest attestation of a virile oblique QS found in this study dates from the second half of the 17th century, which makes the scenario assumed here possible.

It is understandable that the penetration of the accusative into the domain of QSs did not have the same consequences for paucal QSs with non-virile nouns, or for QSs with non-paucal numbers. As for the paucal QS with non-virile nouns, the accusative is syncretic with the nominative. Therefore, it has been possible for the non-virile paucal QS to resist reinterpretation as an accusative. Interestingly, Łoś (1928: 10) notes that there was indeed a tendency of non-virile paucal QSs towards default agreement (e.g., *było_{N.SG} trzy gwiazdy* ‘there were three stars’), which is indicative of the fact that an “accusative interpretation” of the number was also taking place with non-virile QSs. This development was obviously stopped, possibly also due to normative intervention, since default agreement is not admissible (anymore) with non-virile paucal QSs in contemporary Polish. The same analysis also applies to non-paucal non-virile QSs, as the nominative form does not differ from the accusative either. The virile forms of non-paucal numbers, e.g., *pięciu/sześciu/siedmiu* ‘five_{VIR}/six_{VIR}/seven_{VIR}’, in QSs can also be accounted for as accusatives (cf. the overview given in Siuciak 2008: 192).⁴²

⁴¹ Extent modifiers (e.g., *a bit* in *to wait a bit*) develop earlier than degree modifiers (e.g., *a bit* in *to worry a bit*) in the grammaticalization of denominal adverbial modifiers cross-linguistically (cf. Herda 2019 and the references therein).

⁴² For a sketch of the history of the ending *-u* in virile numbers, see Siuciak 2008: 80–82.

The assumption of quantitative subjects in the accusative receives further plausibility in light of the following examples from contemporary Polish (41) and BCS (42–43), which have other Qs in the accusative as well:

- (41) Kupę czasu minęło od tamtego wydarzenia.
 heap_{ACC} time_{GEN} passed_{N.SG} from that incident
 ‘A lot of time has passed since that incident.’ (Herda 2019: 24)

- (42) Polovinu roditelja zabrinuto za budućnost,
 half_{ACC} parents_{GEN} worried_{N.SG} for future
 a DODATNO SU OPTEREĆENI ON LINE ŠKOLOVANJEM SVOJE
 DJECE [emphasis in original]
 ‘Half of the parents are worried about the future, and additionally,
 they are stressed from homeschooling their kids’
 (“Polovinu roditelja...”, *IstraIN*, 2020)

- (43) Prošlo je godinu dana.
 passed_{N.SG} AUX_{3SG} year_{ACC} day_{GEN}
 ‘One year passed.’

One more indication that Qs are in the accusative is that they can function as the direct objects of so-called Adversity Impersonals (Witkoś 2020: 260), which require a direct object in the accusative:

- (44) Dwóch marynarzy zabiło po ich wachcie.
 two_{ACC} sailors_{ACC} killed_{N.SG} after their watch
 ‘Two sailors were killed after their watch.’
 (example adapted from Citko, Germain, and Witkoś 2018: 24)

Klockmann (2012: 58–106, 141f.; 2017: 138–40) is a recent adherent of the nominative-genitive hypothesis, which assumes nominative case for numbers 2–4 with non-virile nouns, but genitive for the oblique numbers with virile nouns. Klockmann puts great effort into deriving the genitive of paucal numbers with virile nouns, including the assumption of a “cyclic Agree” mechanism and an appeal to the partitive genitive assigned to nouns of either gender when combined with non-paucal numbers. However, the accusative hypothesis as outlined above is a simpler, more inclusive and more plausible analysis in light of historical and comparative data.

It remains to answer the question of what kind of subjects Polish Qs actually are. Although Polish Qs receive non-canonical (non-nominative) case marking, they show all behavioral subject properties, such as, for instance, binding of reflexive pronouns (45) and control into gerunds (46):

- (45) Ośmiu rabotników_i oddało swoje_i klucze.
 eight_{VIR} workers_{GEN} handed.over_{N.SG} their_{ACC} keys_{ACC}
 ‘The eight workers handed over their keys.’
 (Citko, Germain, and Witkoś 2018: 33)
- (46) Wracając_i do domu, dwóch mężczyzn_i usłyszało krzyk.
 returning to home two_{ACC} men_{GEN} heard_{N.SG} scream_{ACC}
 ‘Returning home, two men heard a scream.’

Polish Qs thus display behavioral properties like those of canonical subjects. Unlike the latter, however, Qs do not impose agreement on predicates and do not take the nominative case (see also Dziwirek 1994: 214–17; Witkoś et al. 2018: 101–14; Witkoś 2020: 259).

The only exceptions to this rule—that is, the only Qs inducing semantic agreement in contemporary Polish—include numbers whose forms allow for an interpretation as attributive modifiers agreeing with the head noun in the nominative. These are Qs with non-virile nouns and paucal numbers, and of course, the clearly nominative virile forms *dwaj/trzej/czterej*.

All other Qs in contemporary Polish can be analyzed as subject-like obliques in the sense of Seržant 2013 and Schlund 2018. Like all subject-like obliques, Polish Qs cannot induce agreement in predicates. Their capacity to display all behavioral properties of subjects, however, brings Polish Qs closer to the category of non-canonical subjects than other subject-like obliques (such as, for instance, the dative experiencers in various impersonal constructions of Slavic, whose behavioral subject properties are typically much more restricted; e.g., Schlund 2018: 140–46 for Russian).

6. Conclusion

Slavic Qs form a heterogeneous but cognitively well-motivated category. This is because their heterogeneity is inspired by differences in human perception and construal of low numbers on the one hand, and of high or unspecific numbers on the other. These differences help explain both the heterogeneous origins of paucal and non-paucal numbers and their sometimes perplexing agreement resolution patterns and morphological forms up to the present day.

Quantified subjects typically deviate from the subject prototype, particularly with respect to the subject property of referentiality. In Russian deviation from the subject prototype is reflected in the agreement resolution of Qs, with semantic agreement indicating greater prototypicality of the QS than grammatical agreement. In BCS normative rules determine agreement resolution to a great extent, but a tendency towards semantic agreement even with non-paucal numbers is observable precisely when semantic and pragmatic

subject properties increase. As in Russian, this holds particularly for contexts of greater referentiality.

Diachronically, agreement resolution of Polish Qs was originally motivated in ways very similar to the cases in Russian and BCS. The fact that virile paucal Qs in modern Polish require default neuter singular agreement and are marked for the oblique (non-nominative) case likewise received a plausible explanation against historical data. In line with a number of previous accounts, it has been argued here that this case is an accusative of measure (*accusativus mensurae*) that was extended from nominal expressions of quantity to Qs with numerals. The accusative differs from the nominative only with virile nouns (that is, *dwóch/trzech/czterech*), which is why paucal virile Qs function like oblique subjects (or subject-like obliques, in Seržant's 2013 terminology). This analysis of virile paucal Qs applies also under the genitive hypothesis, but there is greater evidence for the accusative hypothesis. Oblique subjects never induce semantic agreement in the predicate, which is why default agreement occurs. The present paper provides some evidence that the usage of nominative and oblique forms of virile paucal numbers in Qs in contemporary Polish is influenced by the subject property of referentiality, but further studies will be necessary to test this claim. As noted by Siuciak (2008: 190), the first attestations of the virile paucal numbers *trzej* and *czterej* (and later, *dwaj*) occur in contexts of mere nomination, and there is some evidence that they are being reduced to this initial function in contemporary Polish (§5.3).

It remains to be investigated in more detail why contexts of increased referentiality can make semantic agreement obligatory (as in Russian) or more likely (as in BCS), or influence the choice between two alternative sets of numbers (namely, the nominative and oblique virile forms of paucal numbers in Polish). After all, the influence of increased agentivity on semantic agreement resolution appears weaker across all three languages. To answer this question, a more refined concept of referentiality will be necessary—one which makes a clear distinction between referentiality as a semantic category and the formal means of a language to signal different degrees or aspects of referentiality. Demonstrative pronouns are but one indicator of the referentiality of a noun phrase; there are other categories to keep in mind (such as, for instance, possessive pronouns or anaphoric reference). What is more, the range and usages of demonstrative pronouns vary considerably across Slavic. While demonstratives serve mainly deictic functions in Russian, anaphoric use of demonstrative pronouns is more elaborate in Polish (see Bunčić 2014: 81). Any effort to determine the role of deixis or anaphor in the agreement resolution of Slavic Qs will have to take these differences into account.⁴³

⁴³ I owe thanks to Hagen Pitsch (Göttingen) for pointing out to me that issues of normativity might also play a role here. The fact that the agreement resolution of Russian

Leaving these questions to further studies, the diachronic and synchronic evidence interpreted in this paper reveals that agreement resolution of Qs in Slavic is a prime example of converging formal, semantic, and cognitive forces in grammar.

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Qs is mostly determined semantically finds a correlate in the alternation between nominative and instrumental case in Russian copular sentences, which may likewise reflect semantic nuances. In Polish, agreement with Qs and case selection in copular sentences are determined structurally (cf. Pitsch 2018).

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