

Numeral Phrases as Subjects and Agreement with Participles and Predicative Adjectives*

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Abstract: The aim of this article is to briefly analyze the agreement patterns in Polish constructions with quantified subjects and participial/adjectival predicates. The analysis addresses two troublesome issues: the Genitive of Quantification, i.e., the source of Genitive on the nominal complement in structural contexts, and the optionality in agreement in case between the participial/adjectival predicate and the numeral (≥ 5) or the noun of the quantified subject. The essential part of the proposal is based on the nanosyntactic approach to the nature of case, i.e., the split Case Phrase (Caha 2009, 2010). The analysis is concerned with the functional sequence of the extended nominal projection and its role in the syntactic derivation of case.

1. The Agreement Puzzle

Patterns of agreement between a quantified subject and a verbal or participial/adjectival predicates in Polish seem to pose a challenge to standard theories of Agree (see Chomsky 2000, 2001, 2008). We observe full subject-verb agreement, i.e., in person, number, and gender, with subjects quantified by lower numerals (Q_LP), i.e., < 5 , as in (1a), whereas phrases with higher numerals and numeral quantifiers (Q_HP s)¹ force default agreement, i.e., 3sg. neut., as in (1b).

- (1) a. Trzy dziewczynki poszły do szkoły.
three_{NOM} girls_{NOM.F.PL} went_{F.PL} to school
'Three girls went to school.'
- b. (Tamte) siedem/ wiele dziewczynek poszło do
those_{ACC.PL} seven_{ACC}/ many girls_{GEN.F.PL} went_{3SG.N} to

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¹ Since we discuss only numerals 5 and above, we use the abbreviation QP instead of Q_HP to indicate phrases with higher numerals.

szkoły.

school

'Those seven/many girls went to school.'²

Another agreement puzzle emerges with participial and adjectival predicates occurring with quantified subjects (QPs), where the participle may optionally occur in accusative or genitive, which indicates agreement either with the numeral or its nominal complement.³

- (2) Pięć kobiet było wybrane/ wybranych do
 five_{ACC} women_{GEN.PL} was_{3SG.N} chosen_{3PL.ACC}/ chosen_{3PL.GEN} for
 rady nadzorczej.
 board supervisory

'Five women were chosen for the supervisory board.'

Interestingly, in other related languages, for instance, in Russian, agreement with quantified subjects is optional, as in (3a). However, once at least one element of the phrase is nominative, then only full agreement is felicitous, as in (3b).

- (3) a. Pjat' devušek rabotali/ rabotalo tam.
 five girls_{GEN.PL} worked_{PL}/ worked_N there
 'Five girls worked there.'
- b. Èti pjat' devušek rabotali/ *rabotalo tam.
 these_{NOM} five girls_{GEN.PL} worked_{PL}/ worked_N there
 'These five girls worked there.'

² Virile (masculine personal) lower numerals also trigger default agreement, i.e., 3sg. neut., in Polish:

- (i) Dwóch mężczyzn wyszło z budynku.
 two_{VIR} men_{GEN.VIR.PL} left_{3SG.N} from building
 'Two men left the building.'

But due to the syncretism of genitive and accusative in virile plural, the case optionality in agreement with predicative adjectives and participles is not detectable.

³ Noting the extensive discussion in the literature (Franks 1994, 1995, 2002; Przepiórkowski 1999, 2001; Willim 2014), we assume that nominal subjects headed by higher numerals in Polish bear accusative rather than nominative; see fn. 11 for empirical justification. The licensing of accusative in this case is identical to the procedure described above, though the relevant probe is in the T head. Lack of space prevents us from presenting a detailed account of this procedure.

The peculiarities of agreement patterns in Polish and Russian have induced us to resume the discussion of different facets of agreement, this time utilizing a nanosyntactic approach (see Starke 2009 and Caha 2009, 2010, *inter alia*) which seems to adequately capture troublesome paradigms with Genitive of Quantification (GoQ).

1.1. A Brief Consideration of Previous Accounts

Most previous accounts of the agreement triggered by QP subjects focused on the relation between T_{FIN} and the QP and dealt with Russian data, which do not mirror the Polish facts, as we see in examples (1–2). Initially, the contrast between the agreeing and nonagreeing QP subjects in Russian was credited to structural differences between these phrases and their position in overt syntax. According to Pesetsky (1982) and Franks (1994, 1995), Russian (Slavic) numeral phrases are structurally ambiguous between QPs and NPs, which shows up in the subject position (see Franks 1995, 2002: 149).⁴

- (4) N projects to QP and DP in Russian.

QP appears in the thematic position of Spec ν P and in the context of default subject-verb agreement, while NP/DP appears in the structurally higher position of SpecTP, receives nominative case, and triggers full subject-verb agreement. The core reason for the structural difference lies in the fact that NP/DPs require case and move to the canonical subject position, while QPs can remain in situ in Spec ν P as long as the NP complement to Q is provided with case (genitive). This difference helps to explain the Russian data, presented in (5a–e):⁵

- (5) a. Pjat' ženščin smotreli/ smotrelo na Ivana.
 five women_{GEN.PL} looked_{PL}/ looked_N at Ivan
 'Five women looked at Ivan.'

⁴ Originally, this analysis appears in Pesetsky 1982: 88–89 in the form of the QP Hypothesis, whereby the no-agreement numeral phrase projects to QP, while the agreement numeral phrase projects to NP. Additionally, QP does not require case and is not subject to the Case Filter of Chomsky 1981:

- (i) [QP [Q šest'] [N studentov]] no-agreement numeral phrase
 (ii) [NP [Q šest'] [N studentov]] agreement numeral phrase

Franks (1994, 1995, 2002) sets the distinction between (i) and (ii) in terms of the DP hypothesis.

⁵ These examples are quoted from Franks (1995: 121–22) and Pesetsky (1982: 143, e.g., ex. (5c)). It must be stressed that this is an approximation, as these diagnostics are questioned by some native speakers of Russian.

- (5) b. Pjat' ženščin smotreli/ *smotrelu na sebja.
 five women_{GEN.PL} looked_{PL}/ looked_N at themselves
 'Five women looked at themselves.'
- c. PRO vozvraščas' domoj, pjat' mal'čikov zašli/
 returning home five boys_{GEN.PL} dropped.in_{PL}/
 *zašlo v magazin.
 dropped.in_N to store
 'Returning home, five boys dropped in to the store.'
- d. Pjat' ženščin staralis'/ *staralos' PRO kupit' ètu
 five women_{GEN.PL} tried_{PL}/ tried_N buy_{INF} this
 knigu.
 book
 'Five women tried to buy this book.'
- e. Skol'ko čeloveki Ivan думаet, čto t_i *pročitali/
 how.many people_{GEN.PL} Ivan thinks that read_{PL}/
 pročitalo ètu knigu?
 read_N this book
 'How many people does Ivan think read this book?'

The examples in (5) demonstrate that depending on the type of projection in the subject position, i.e., NP/DP or QP, either full and default agreement are both possible or only one or the other is. In (5a) both full and default agreement are fine, which points to the availability of both DP and QP as subjects. In sentences (5b–d), however, only the DP is the legitimate choice since in the agreement patterns only a DP-subject can bind the anaphor, as in (5b), or control the PRO subject of the participial clause or the PRO subject in a regular complement infinitive, as in (5c) and (5d), respectively. In contrast to (5b–d), the structure in (5e) shows that QP nonagreeing subjects can be extracted while the agreeing ones cannot. Unfortunately, the distinctions captured in (5) seem to be limited to Russian, as the equivalent QPs in Polish share all the functions of the DP in Russian despite the obligatory use of default agreement, as in (6a–e).

- (6) a. Pięć kobiet *patrzyły/ patrzyło na Jana.
 five women_{GEN.PL} looked_{PL}/ looked_{N.SG} at Jan
 'Five women looked at Jan.'
- b. Pięć kobiet *patrzyły/ patrzyło na siebie.
 five women_{GEN.PL} looked_{PL}/ looked_{N.SG} at themselves
 'Five women looked at themselves.'

- (6) c. PRO Wracając do domu, pięciu chłopców *weszli/
 returning to home five boys_{GEN.PL} dropped.in_{PL}/
 weszło do sklepu.
 dropped.in_{N.SG} to store
 'Returning home, five boys dropped in to the store.'
- d. Pięć kobiet *staraly/ starało się PRO kupić tę
 five women_{GEN.PL} tried_{PL}/ tried_{N.SG} REFL buy_{INF} this
 książkę.
 book
 'Five women tried to buy this book.'
- e. %Ilu ludzi Jan myśli, że t_i *przeczytali/
 how.many people_{GEN.PL} Jan thinks that read_{PL}/
 przeczytało tę książkę?
 read_{N.SG} this book
 'How many people does Jan think read this book?'

As shown in examples (6a–d), the default form of T (the verb) is obligatory, even though the subject numeral can successfully bind an anaphoric pronoun, control into a participial adjunct clause, and control into an infinitival complement. Consequently, the QPs in (6a–d) must occupy the canonical subject position in SpecTP just as predicted in Franks 1994, 1995 for DP subjects in Russian.

Pereltsvaig (2006) makes further observations concerning the contrasts shown in (5) above.⁶ She notices that on top of the morphosyntactic differences, the agreeing and nonagreeing subjects also differ in a number of interesting interpretive options. For instance, the so-called individuated or definite interpretation is possible only with agreeing subjects, while the nonagreeing subject receives the group interpretation, as in (7).⁷

- (7) Rol' Džejmса Bondа ispolnjali/ #ispolnjalo [p'jat'
 role James Bond performed_{PL}/ performed_N five
 izvestnyx akterov].
 famous actors
 'Five famous actors performed the role of James Bond.'

⁶ Pereltsvaig manages to show quite convincingly that both NP/DPs and QPs occupy the same position in overt syntax in Russian, contra Pesetsky 1982 and Franks 1994, 1995.

⁷ This observation was also made by Pesetsky (1982: 84–85), noting that the group reading correlates with nonagreeing numeral phrases.

The agreeing form is the preferred one here because an individual role must have been played by different individual actors. Furthermore, only agreeing subjects can receive a specific interpretation brought out by adjectives denoting specificity:

- (8) a. V Mariinskom teatre tancevali [opredelennye pjat'
in Mariinsky theater danced_{PL} certain five
balerin].
ballerinas.
'A certain five ballerinas danced in the Mariinsky Theater.'
- b. *V Mariinskom teatre tancevalo [opredelennyx pjat'
in Mariinsky theater danced_N certain five
balerin].
ballerinas.

Perelstvaig also acknowledges a correlation between the agreement pattern and a strongly partitive interpretation referring to a subset of a previously mentioned set:

- (9) a. V naš gorod [priexala gruppa balerin]/ [priexali
to our town came group ballerinas_{GEN}/ came
baleriny] iz Peterburga.
ballerinas from Petersburg
'A group of ballerinas from St. Petersburg came to our town.'
- b. ... vo včerašnem koncerte tancevali [pjatero iz nix].
in yesterday's concert danced_{PL} five of them
'... five of them danced in yesterday's concert.'
- c. *... vo včerašnem koncerte tancevalo [pjatero iz nix].
in yesterday's concert danced_N five of them

Another correlation concerns a possible inverse scope reading with the agreeing numeral subjects and a fixed surface scope reading with the nonagreeing ones:

- (10) a. Každyj raz pjat' xirurgov operirovali Bonda.
every time five surgeons operated_{PL} Bond
'Every time five surgeons operated on Bond.'
ambiguous: every > 5 or 5 > every

- (10) b. Každýj raz pjat' xirurgov operirovalo Bonda.
 every time five surgeons operated_N Bond
 'Every time five surgeons operated on Bond.'
 unambiguous: every > 5; #5 > every

In sum, the agreeing numeral subjects show the following properties among others: they allow for the individuated, specific, and partitive interpretations, as well as nonisomorphic wide scope. Their nonagreeing equivalents mirror these properties. Extending the previous analyses in Pesetsky 1982 and Franks 1994, 1995, 2002, Perelstvaig proposes the following representations for agreeing (referential) numeral subjects and the nonagreeing numeral subjects:

- (11) a. [DP \emptyset_D [QP five_Q [NP banditov_N]]]
 b. [QP five_Q [NP banditov_N]]

Crucially for her analysis, the level of the NP/DP projection in (11) correlates with full agreement and nominative licensing in subject position on the morphosyntactic side and the property of referentiality (reference to individuals) on the semantic side. Furthermore, she submits that within an articulated structure of the nominal phrase, N bears ϕ -features, but the ϕ -features on N are unvalued, and it is only the presence of D in the functional domain of the NP that values these features.

Needless to say, the correlations observed in Perelstvaig 2006 do not hold for Polish. We consider below Polish examples equivalent to the ones in Russian above:

- (12) Rolę Jamesa Bonda *odegrali/ odegrało [pięciu
 role James Bond performed_{PL}/ performed_{N.SG} five
 znanych aktorów].
 famous actors
 'Five famous actors performed the role of James Bond.'

Despite the fact that the agreeing form is completely unavailable in Polish, the individuated reading can be obtained nevertheless. So example (12) clearly implies that the role of James Bond must have been played by five different individual actors. The specific interpretation brought out by adjectives denoting specificity is available with the nonagreeing numeral subject:

- (13) W Teatrze Wielkim *tańczyły/ tańczyło [pewne pięć
 in theater great danced_{PL}/ danced_{N.SG} certain five

tancerek].
dancers

'A certain five dancers danced in the Great Theater.'

The strongly partitive interpretation, referring to a subset of a previously mentioned set, is available with the nonagreeing numeral subject, the only morphosyntactic option in Polish:

- (14) a. Do naszego miasta przyjechała grupa tancerek/
to our town came group dancers_{GEN}/
przyjechały tancerki z Petersburga.
came dancers_{NOM} from Petersburg
'A group of dancers from St. Petersburg came to our town.'
- b. ... podczas wczorajszego koncertu *tańczyły/ tańczyło
in yesterday's concert danced_{PL}/ danced_{N.SG}
[pięć z nich].
five of them
'Five of them danced in yesterday's concert.'

It appears that both scope readings are available in Polish, though clearly the isomorphic scope is the preferred reading:

- (15) Za każdym razem pięciu chirurgów *operowali/ operowało
for every time five surgeons operated_{PL}/ operated_{N.SG}
Bonda.
Bond
'Every time five surgeons operated on Bond.'
ambiguous: (every > 5 or 5 > every)

Thus it seems that a tuning of Perelstvaig's "small nominal" analysis is required in view of the Polish data, and the far-fetched claims concerning the structure of nominals in (11) encounter a problem in languages that allow for DP-style interpretations with QP-type morphology. In section 2 we develop an account wherein the deficiency of the "small nominal" does not stem from the size of its syntactic representation but from the lack of homogeneity of its inflectional paradigm or from its deficiency.⁸

Our proposal is related to Bošković 2006. Bošković submits that a division into QP/DP can be dispensed with in favor of distinction based on (abstract)

⁸ For lack of space we cannot develop these aspects of our analysis in this paper.

case.⁹ He puts forward the idea that higher numerals are ambiguous between case (nominative/accusative) and caseless forms, whereas nominative always correlates with a full agreement. Moreover, the numeral *pjat'* constitutes an FP and shows one syncretic form for both structural cases:¹⁰

(16) [FP QP [F' F NP]]

(17) *pjat'*: a. nominative b. accusative c. caseless

According to Bošković 2006 nominative-case marking entails full agreement (as in Chomsky 1995 and the T/AgrS model). This means that anaphoric binding in (5b) and control in (5c–d) are possible only when the FP subject appears in nominative, shows full agreement, and occupies the canonical subject position in SpecTP. In all these cases FP includes the numeral *pjat'*, equivalent to (5a). Extraction of the subject is possible only when it appears in a lower position of SpecvP, in line with Pesetsky's (1982: 120) application of Rizzi's (1982) ECP-based hypothesis on the postverbal-subject extraction to Russian.

In order to strengthen his point, Bošković provides example (18) below, arguing that as soon as any element of the FP shows nominative, the entire FP loses its ambiguity, appears as nominative, and triggers full agreement:

(18) a. *Pjat' devušek rabotali/ rabotalo tam.* (Russian)
 five girls_{GEN.PL} worked_{PL/} worked_N there
 'Five girls worked there.'

b. *Èti pjat' devušek rabotali/ *rabotalo tam.*
 these_{NOM} five girls_{GEN.PL} worked_{PL/} worked_N there
 'These five girls worked there.' (Russian)

(19) a. *Te trzy dziewczyny pracowały/ *pracowało*
 these_{NOM.PL} three_{NOM} girls_{NOM.PL} worked_{PL/} worked_{N.SG}
tam.
there
 'These three girls worked there.' (Polish)

⁹ Franks 2002 proposes to credit the difference between Russian QP/DP subjects and Polish and SC DP-only subjects to the presence of pronominal clitics in the latter languages and the lack thereof in East Slavic. He also assumes that clitics express a functional category Kase, rather than Det, so the numeral phrases in SC (and Polish) should be KPs, while in Russian they can be QP/DP.

¹⁰ This proposal corresponds to the Licensing Parameter from Franks 2002: 159: Polish QPs are licensed only in accusative DPs, whereas Russian QPs are licensed in accusative and nominative DPs.

- (19) b. Te pięć dziewczyn *pracowały/ pracowało tam.
 these_{ACC.PL} five_{ACC} girls_{GEN.PL} worked_{PL}/ worked_{N.SG} there
 'These five girls worked there.'
 (Polish)

We follow the insight in (17) and propose to credit the difference between Polish and Russian to distinct cases on the QP subject. While in Russian the case of the higher numeral (and certain quantifiers) varies between nominative and accusative, in Polish it is accusative. So Russian T_{FIN} can successfully probe for the ϕ -features of the subject QP when it shows the ϕ -features that would match T_{FIN} . In Polish, and in certain contexts in Russian, the higher numeral appears in the subject position in the other structural case, accusative (see Franks 1994, 1995, 2002 and Przepiórkowski 2004), which precludes agreement for ϕ -features with T:¹¹

- (20) $T_{\phi/default} \leftrightarrow [QP[+acc] Q [NP]]$

Following this imperfect Match, T defaults to 3sg. neut., which suffices to account for (19) above. However, we are still left with the issue of the optional participial and adjectival agreement:

- (21) Te/ Tych pięć dziewczyn było
 these_{ACC.PL}/ these_{GEN.PL} five_{ACC} girls_{GEN.PL} was_{3SG.N}
 [P_{RtP} wybran-e/ wybran-yh do konkursu].
 selected_{3PL.ACC}/ selected_{3PL.GEN} to contest
 'These five girls were selected for the contest.'

Such variable agreement implies that the QP has a hybrid structure; if Q_{ACC} were the head, only the accusative form should appear on the participle/adjective. An attempt at explaining these agreement properties appears

¹¹ Przepiórkowski 1999 proposes that QPs are marked for accusative in the subject position on the basis of the following comparison, among others:

- (i) (Tych/ Te) pięć kobiet stało.
 these_{GEN.F}/these_{NOM?/ACC.F} five_{NOM?/ACC.F} women_{GEN.F.PL} stood_{3SG.N}
 'These five women were standing.'
 (ii) (Tych/ *Ci) pięciu mężczyzn stało.
 these_{ACC/GEN.M}/ these_{NOM.M} five_{NOM?/ACC/GEN.M} men_{GEN.M.PL} stood_{3SG.N}
 'These five men were standing.'

The common case form of the demonstrative 'these' for both genders is accusative, on the assumption that its optional genitive reflects the placement of the demonstrative in the domain of the NP-complement and its subsequent raising to the domain of the numeral/quantifier.

in Przepiórkowski and Patejuk 2012 and in Willim 2015. In a nutshell, Willim 2015 formulates an alternative to the accusative hypothesis and instead proposes a “no case hypothesis.” She develops an account based on a dynamic approach to the phase-based derivation, where the hybrid nature of the GoQ construction stems from the variable feature make-up of the head F and QP in the following structure, where QP is placed in an adjunct position:

$$(22) \quad [[QP]_{[uQ]}] [FP F_{[iQ]} NP]]$$

In the structural-case contexts the NP complement to F has its case valued by F and is spelled out, while the case feature on F is deleted. QP in (22) bears an unvalued case feature and cannot have it valued either against F or the NP, which is inaccessible at this point. Willim assumes that that the nominal constituent in (22) makes a poor goal for Agree for both T_{FIN} and the predicative adjective because these probes are faced with ambiguous equidistant goals, each bearing different case features (no case feature on F(P) and an unvalued case feature on QP). As a result, T_{FIN} and the predicative adjective attempt to Agree, but they cannot have their ϕ -features valued in narrow syntax. This attempted but failed Agree does not automatically lead to the crash of the derivation (see Preminger 2009); instead such unvalued features are provided default values in the PF component by morphological realization rules. This interesting and elaborate account deftly combines a discussion on ϕ -feature sharing and case properties of the GoQ in Polish, yet appears to excessively empower the PF component with the ability to dispense with unvalued features. At the same time it allows for the appearance of unvalued uninterpretable features in the LF representation.¹² Additionally, it appears that the case feature of QP in (22) is valued earlier than on the PF branch, as it is sensitive to clausal negation and shifts to genitive under its scope, as any other accusative nominal object in Polish does:

- (23) a. Jan widział pięć dziewczyn.
 Jan saw five_{ACC} girls_{GEN}
 ‘Jan saw five girls.’

¹² Willim (2015) credits the following examples to Buttler, Kurkowska, and Satkiewicz (1986: 344):

- | | | | | | |
|------|-------------------------|-----|-----------------------------|---------|---------------------------------------|
| (i) | Tych | 246 | osób | zostało | zaproszone. |
| | these _{PL.GEN} | 246 | persons _{F.PL.GEN} | was | invited _{NON-VIR.PL.ACC/NOM} |
| (ii) | Tych | 246 | osób | zostało | zaproszonych. |
| | these _{PL.GEN} | 246 | persons _{F.PL.GEN} | was | invited _{PL.GEN} |

- (23) b. Jan nie widział pięciu dziewczyn.
 Jan not see five_{GEN} girls_{GEN}
 'Jan did not see five girls.'

Przepiórkowski and Patejuk (2012) submit, within the formalism of LFG, that the numeral subject has a hybrid single/multi-headed structure similar to the treatment of coordination. This structure is hybrid in the following sense: it is single-headed for the purposes of case assignment (the numeral head shows accusative) but multiheaded for the purposes of agreement, as in (24) (from Przepiórkowski and Patejuk 2012: 496).

$$(24) \quad \boxed{1} \left[\left\{ \boxed{1} \begin{bmatrix} \text{CAT} & \text{NUM} \\ \text{CASE} & \text{ACC} \end{bmatrix} + \boxed{2} \begin{bmatrix} \text{CAT} & \text{NOUN} \\ \text{CASE} & \text{GEN} \end{bmatrix} \right\} \right]$$

Their representation displays a hybrid feature structure because the numeral and the noun are elements of the set represented in (24). Additionally, the element representing the numeral constitutes the whole hybrid structure. Consequently, the case assigned to the entire feature structure is shared with the first element (the numeral). The consequence of the structural assumption in (24) is that genitive agreement facts can be accounted for via the same mechanism as single-conjunct agreement.¹³ However, any account of the optional agreement pattern based on the structural treatment of QP as a hybrid coordinatelike structure leads to the question of the robust difference in frequency between the optional agreement forms of the participle/adjective agreeing with QP in (21) and distant-conjunct agreement in Polish. The former are far more frequent than the latter, which is at best very rare.¹⁴ The account we propose overcomes these problems.

¹³ Przepiórkowski and Patejuk (2012) admit that Polish single-conjunct agreement would typically be with the closest conjunct (in a postverbal context), but they provide a corpus example (disjunction) showing distant-conjunct agreement, which corresponds to participle/adjective agreement in genitive with the NP-complement to the numeral, rather than its agreement in accusative with the more proximate numeral:

- (i) Ewentualna porażka lub remis kosztowałyby ich utratę
 potential_{F,SG} defeat_{F,SG} or draw_{M,SG} would.cost_{F,SG} them loss
 żółtej koszulki lidera.
 yellow jersey leader

'A potential defeat or draw would cost them the leader's yellow jersey.'

¹⁴ Przepiórkowski and Patejuk (2012: 496, fn. 9) duly acknowledge this reservation regarding their account.

1.2. Genitive of Quantification: A Brief Diachronic Diversion on

$N_Q \rightarrow Q$

An adequate analysis of agreement patterns with quantified subjects requires a proper understanding of the nature of numerals and the changes they have undergone. Considering that genitive is a typical adnominal case as well as the fact that in the past numerals ≥ 5 used to be nouns with a feminine declension, the question that should be initially addressed is what category numerals are and what feature make-up they possess.

Historically, Polish higher numerals shifted from pure nominals (feminine declension) conditioning genitive case in their complement to functional elements serving as modifiers agreeing in case with the nominal head.¹⁵ Rutkowski (2007: 240) presents the following comparison, e.g., *pięć lat* 'five years'.¹⁶

(25) Case	a. Old Polish	b. Present-Day Polish
Nominative	pięć lat	pięć lat
Genitive	pięci lat	pięciu lat
Dative	pięci lat	pięciu latom
Accusative	pięć lat	pięć lat
Instrumental	pięcią lat	pięcioma latami
Locative	pięci lat	pięciu latach

He further proposes to capture the diachronic change in terms of a grammaticalization procedure, whereby a higher numeral turns from a content category N to a functional category Q.¹⁷

(26) [DP D [NP pięć_N [DP D [NP lat_N]]] Old Polish

(27) [DP D [QP pięć_Q [NP lat_N]]] Present-Day Polish

¹⁵ A section of the table in (25a) also reflects a purely nominal paradigm of such expressions in Polish as *tuzin* 'dozen' or *tysiąc* 'thousand', as well as *piątka* '(a set of) five'.

¹⁶ Initially, this argument concerning the nominal origin of numerals was brought up in Pesetsky 1982: 146:

- (i) s toju pjat'ju staryx ženščin
 with that five_{SG.INST} old_{PL.GEN} women_{F.PL.GEN}
 'with that five old women'

¹⁷ The reanalysis of the structure with numerals was proposed by Babby (1987) for Russian. The numeral as the head in Old Russian has been reanalyzed as the quantifier, whereas the noun from the head of the adnominal complement has become the head of the entire NP in Modern Russian (Babby 1987: 104).

This diachronic change leads to both a simplification and complication of the structure of Q-N relations. The structure is simplified from a binominal frame, with a regular [DP D [NP N [DP D [NP N]]]] content (or a functional-projection/lexical-projection content) to a single nominal constituent headed by N but insulated by two functional categories [DP D [QP Q [NP N]]].¹⁸ The latter structure becomes more complicated than it used to be. In terms of the feature composition of the N and Q categories, the relevant difference correlates with the presence or absence of the [_iperson] feature; see (28) below. Activation of this feature finds its source in the past when higher numerals were nouns, see (26).

- (28) a. Adjective [_unum] [_ugen] [_ucase]
 b. Numeral [_u*num] [_u*gen] ([_iperson]) [_ucase]
 c. Noun [_inum] [_igen] [_iperson] [_ucase]

Consequently, we propose that the activation of this feature on the higher numeral by T/v is a residue of the diachronic change that took place in Polish grammar.

- (29) The construction of the Genitive of Quantification is a residue of an earlier, fully nominal stage in the diachronic development of Polish numerals.

Its residual character is clear from its distribution, as it occurs only in a subset of QP environments. It is like the residue of V2 in English (captured through the feature composition of C; see Roberts 1993), showing up only in interrogative and emphatic constructions. Though the [_iperson] feature on NumP in present-day Polish is activated by T/v, the structure is not binominal as in (26). In other words, the idiosyncrasy of the GoQ construction stems from the fact that the constituent structure of the frame is modern, i.e., (27), but the feature content of NumP comes from Old Polish. The in-between pattern in (28b) reflects the Polish (Russian) GoQ constructions, where in structural-case contexts the higher numeral, which otherwise behaves like an adjective, starts behaving like a nominal when matching a finite T/v probe.¹⁹ The activation of

¹⁸ For another recent discussion of the historical development of higher numerals in Polish, see Miechowicz-Mathiasen 2014.

¹⁹ The categorial status of numeral quantifiers has been extensively analyzed in the literature. For example, according to Babby (1987) they are an in-between category. Greenberg (1978) and Corbett (1978a, b) highlight the fact that higher numerals resemble nouns. Ionin and Matushansky (2006) argue that certain higher numerals in Russian have nominal properties. Also Caha (2012, 2015) treats numerals as nouns. Our account of the Polish GoQ captures the hybrid nature of the higher-numeral case

an otherwise dormant feature [_iperson] causes the higher numeral to become a nominal for the purpose of further derivation; it has a full menu of ϕ -features (presumably set-interpretable default values of 3sg. neut.), which makes it a legitimate goal for case valuation by T/v.²⁰ We also submit that this nominalized numeral construct is defective, having an impoverished case menu in which both structural cases, nominative and accusative, are lumped into accusative.²¹

2. Genitive of Quantification in the Nanosyntactic Model

The major claim of the nanosyntactic approach is that subword/morpheme level processes are parallel with core syntactic processes. In the syntax of nominals the nanosyntactic model (see Starke 2009; Caha 2009, 2010; Taraldsen 2009) provides a means to derive various case patterns allowing for movement of the entire Traditional Noun Phrase (TNP) within the set of Case projections (split KP). The analysis of the position of the nominal head with respect to its satellites (demonstratives, numerals, adjectives) is based on Cinque 2005, 2010, which restricts certain types of movement, i.e., rightward and downward movements are forbidden, and determines which chunk of the structure can be moved, typically the one with the nominal head. The essential component of the analysis is that particular cases are matched to the functional projections within an articulated Kase Phrase (KP), which belongs to the extended projection of the noun (TNP). The nominal, in order to acquire a given case, i.e., a proper case suffix, merges in the structure uninflected and in the course of the derivation moves to a position c-commanding a given case, as in example (30) below. In our proposal this is the specifier position of a particular Case Projection. Movement of the nominal is initiated by the probe, and its position

paradigm in a way compatible with the minimalist derivation, which is constrained by the Extension Condition (Chomsky 1995) and No Tampering (Chomsky 2000, 2001, 2008). Minimalism does not allow for changing the label of the numeral from A to N in the middle of a derivation, which is openly or implicitly assumed in the literature (Franks 1994, 1995, 2002; Bailyn 2004; Bošković 2006; etc.).

²⁰ The intraderivational nominalization of the otherwise adjectival QP in our proposal corresponds to the assumption in alternative accounts (see Baylin 2004, Bošković 2006, Willim 2015) on which Q (or F_Q) optionally bears a case feature in structural case contexts, which requires a look-ahead capability beyond the formation of the nominal constituent and beyond the first phase. In principle, we could have adopted this proposal as well; the crucial element in our account is that QP constitutes a part of the extended projection of NP and does not project its own independent set of case projections.

²¹ In a sense the proposal of a defective case paradigm for QPs captures Pereltsvaig's concept of the small nominal; a defective paradigm in our approach implies a smaller set of case projections, deprived of one projection level (NomP) at the bottom.

in the case sequence is determined by language-specific constraints. The case sequence and ordering of cases is uniform across languages and is stated in the Universal Case Contiguity (from Caha 2010: 38; see also Blake 1994 and Caha 2009):

- (30) comitative > instrumental > dative > genitive > accusative > nominative [noun]

As the structure in (30) shows, nominative and accusative are placed as the lowest ones in the sequence, which indicates that they are the least marked cases and set apart from the oblique cases, which are usually morphologically more complex (Caha 2009).²² Also, case syncretisms are predicted for adjacent cases/nodes. Case suffixation follows either an analytic pattern (pied-piping) or a synthetic one. In the former case the nominal core (NP) moves successive cyclically to the specifier position of each intermediate case and pied-pipes this functional sequence to its final destination within KP. In the latter, the nominal core moves in a single step to its final specifier position (direct movement) and no pied-piping is evident morphologically. In general the nanosyntactic approach to case predicts that nominals in Slavic wear their cases on their sleeve in the sense that the TNP moves overtly to a given position within the Kase Projection, which constitutes the external functional-projection layer of the nominal constituent.

2.1. Case Projections within Polish Nominals: Preliminary Assumptions

In our analysis of Polish nominals we take the noun to be the core element of the phrase, whereas demonstratives, adjectives, or numeral quantifiers are located in specifiers and adjoined positions:²³

²² The case hierarchy in (30) overlaps to a large degree with the hierarchy proposed in Babby 1987, where the leftmost cases override the rightmost cases on the assumption that lexical properties must be satisfied before the syntactic ones (Principle of Lexical Satisfaction), i.e., Lexical case > GenQ > Nom/Acc.

The sequence of case preference in (30) is to be taken representationally, rather than derivationally, so Babby's case overriding is not Pesetsky's 2013 case overwriting.

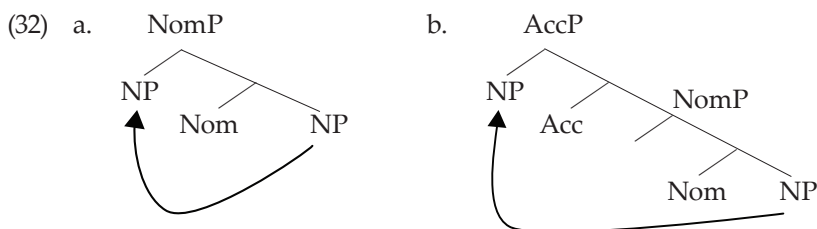
²³ We subscribe to the view that the higher numeral in the structural case occupies a specifier position, following Bailyn 2004. This structure implies that the numeral can be independently modified with intensifiers, e.g.:

- (i) [[prawie 350] ludzi]
almost 350 people
- (ii) *[prawie [350 ludzi]]

Willim (2015: 325–29) also extensively argues for the phrasal nature of the numeral projection within the Polish QP.

(31) ... [QP Num(P) [Q' F_Q [NP Dem [NP Adj [NP N]]]]]

The set of case projections (KP), taking active part in the licensing of case, is split into particular case projections and belongs to the extended functional projection of a noun. Thus there is one articulated KP for each nominal core and its modifiers in Polish.²⁴ The NP headed by the noun with a [+N] feature moves up to a given position within KP, i.e., to the specifier of what we call the Nominative Phrase (NomP), the Accusative Phrase (AccP), or the other Case Projections, etc., where a given case is licensed. The exact motivation for this movement is the need for a successful Spell-Out of a given case suffix, in line with Caha 2009, 2010:

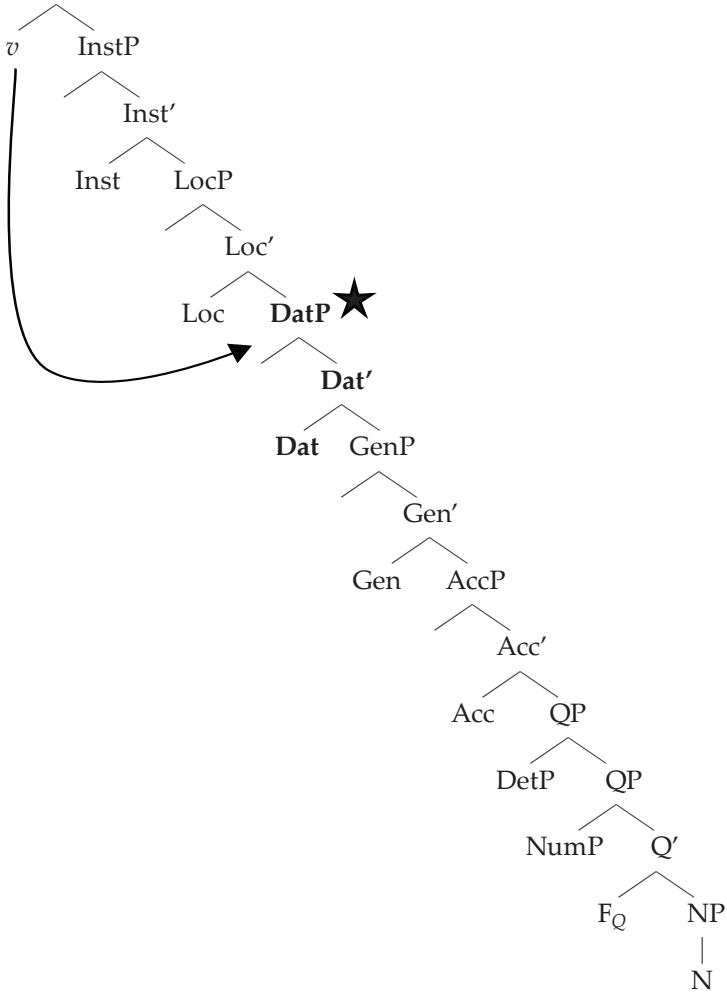


The older nanosyntactic literature devotes little attention to the relation between the extended projection of the nominal and the KP and other components of the derivation, opening itself to the charge of “look-ahead” (Caha 2012, 2015). We attempt to incorporate the detailed syntax of case with the syntax of larger components including the nominal (the phrase and the clause) in a manner compatible with phase theory. Thus in example (33) we present an exemplary derivation with a QP selected by a head, a verb or a preposition, which imposes dative on its argument (the homogeneous pattern). We assume that the case paradigm of the higher numeral is defective in that its KP is truncated at the bottom and NomP is absent, with accusative left as the only structural case (see section 1.2):

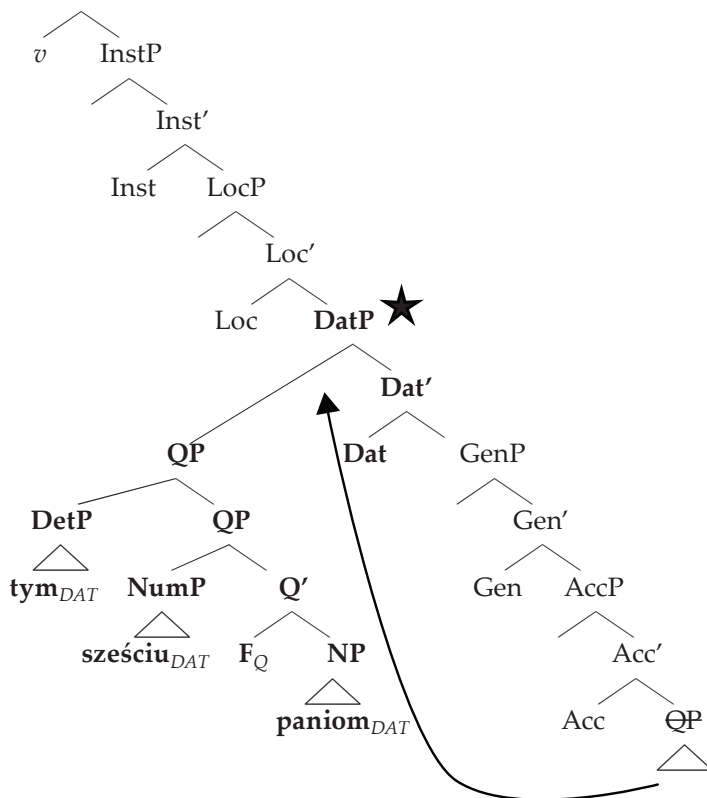
(33) a. tym sześciu paniom
 these_{DAT} six_{DAT} ladies_{DAT}

²⁴ One KP per a nominal projection, i.e., the head noun and its modifiers, is a crucial difference between our proposal and Caha’s (2009, 2010) account, in which projection of every declining element is topped with a separate KP.

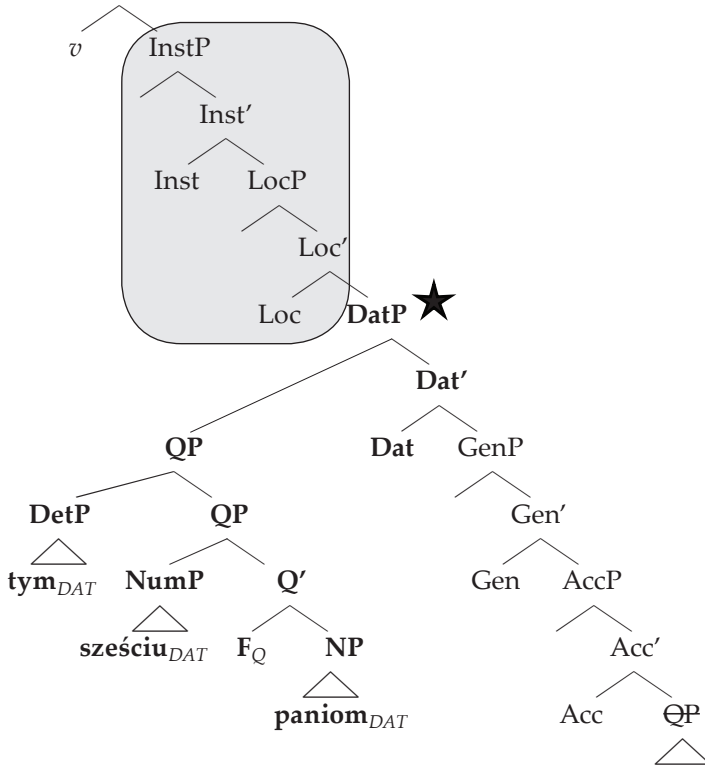
(33) b. activation of DatP



(33) c. movement of QP to DatP



(33) d. deletion of the KP section above DatP



Upon the merger of a (quantified) nominal with a full inventory of cases with the probe, *v* or *P*, selecting for an argument in a particular case, a relevant Case Projection within KP becomes activated, shown in (33b), and attracts the QP, shown in (33c). The movement of QP to SpecDatP follows from the postulate of Spell-Out-driven movement, whereby the section of the KP sequence is spelled out as the dative suffix. As a result, the whole QP phrase moves to the specifier of the Dative Phrase where all the elements in the extended projection of N (the bearer of the full set of ϕ -features) become marked dative. In this derivation, contrary to a major tenet of nanosyntax, the case head affects the entire phrase, and the suffix must be appended not only to the final nominal position in the phrase, but it must also spread onto the numeral/adjective/demonstrative. At this time we can only propose that the derivational stage in (33) takes place in narrow syntax and the nominal sequence is marked to

be realized with morphological content on the PF branch.²⁵ After the part of a derivation in which all the elements of the TNP are secured with the right case, other higher and unused projections within KP are elided, see (33d).²⁶

2.2. The Derivation of the Genitive of Quantification

As discussed in the previous section, TNP in Polish constitutes an extended projection of N (see Grimshaw 1991 and Bošković 2014). Note that various elements of the same nominal sequence are distinct from each other in the sense of Relativized Minimality (Rizzi 1990) and do not cause intervention effects with respect to one another's participation in Match, Agree, and Move for case. Case licensing on N may involve pied-piping of its dependents assuming that both the nanosyntactic marking of case and the syntactic operations affecting the extended functional sequence of the noun share the same mechanics (Caha 2009, 2010). Nanosyntax was partially inspired by Cinque 2005 and the study of permutations in DP/NP internal word orders involving demonstratives, numerals, and adjectives, which share a number of properties with case marking viewed as a result of syntactic movement. For instance, one of the scenarios for case licensing in Caha 2010 involves analytic structures requiring pied-piping of lower case markers.²⁷ Before we proceed any further we must forcefully state that we clearly distinguish between two superfi-

²⁵ By doing so we subscribe to the proposal spelled out in Pesetsky (2013: 99–102) concerning the spread of case within a particular case-marked domain through morphological means. His particular technical solution relies on the use of prototype categories that become sisters to case bearers and has two interesting aspects. First, a prototype x^* is realized adjacent to the smallest element dominated by the sister of the case licenser. Second, the prototype is not necessarily realized as word-level morphology but is realized at the lowest structural level that the language and construction permit, which is sometimes phrase-level. In the system developed here, case is appended to the constituent that a given case head attracts and makes it its specifier. The lexical realization (e.g., spread within this constituent) is determined by the morphology of a given language.

²⁶ When it comes to the unused case shells, for the time being we assume that once at least one case projection is activated within KP, the rest of the case projections become irrelevant for further derivation, although according to Caha 2009 case shells are spelled out, for example, as part of verbal morphology. We leave this aspect of the derivation for further research.

²⁷ For example, from the point of view of their morphological composition, Vlach Romani oblique cases are built on top of structural cases, so in terms of a nanosyntactic analysis Genitive is constructed via pied-piping of the Accusative, e.g., ACC *čhav-és* 'boy_{ACC}', GEN *čhav-és-koro* 'boy_{ACC-GEN}', e.g., from Caha 2010: 42.

- (i) [Gen koro [Acc *čhav-és* [Nom *čhav-és*]]]
- (ii) [Acc *čhav-és* [Gen koro [Acc *čhav-és*]]]

cially similar phenomena: case composition and case stacking. The former is ubiquitous in nanosyntax. It refers to the morphological composition of case suffixes and is instrumental in establishing the case sequence in example (30) above. It does not presuppose, and must be distinguished from, case stacking understood as a multiple procedure of case marking of one and the same NP set against a number of case-licensing heads in the same derivation (see Richards 2007; Pesetsky 2013). Case stacking typically involves case overwriting, a procedure of nullifying an earlier case relation [$\text{head}_1 - \text{NP}$] by a later relation [$\text{head}_2 - \text{NP}$], with or without a morphological trace of the earlier relation showing up on the NP. Our account does not presuppose case stacking. On the contrary, we assume (34):

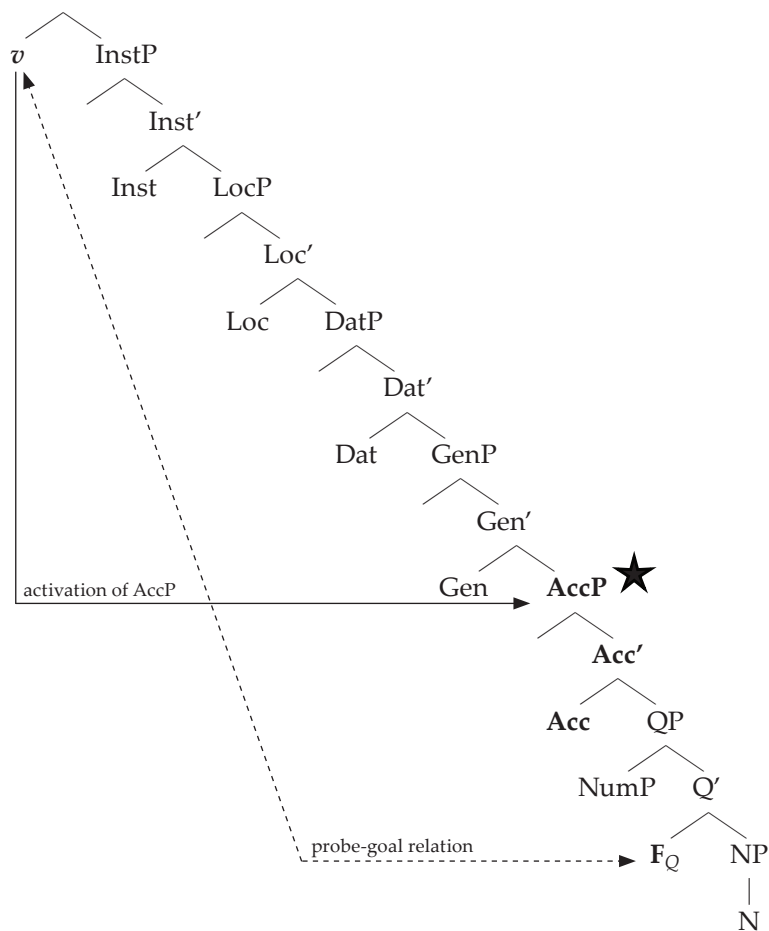
- (34) Each head bearing a full set of ϕ -features (and its extended projection, including dependents, i.e., adjectives and adjuncts) participates in only one case relation per derivation.

In the structural-case context, say accusative, *v* accesses KP with a full set of ϕ -features to value it as accusative and to have its own complete ϕ -feature set valued. In the context of nanosyntax we propose the following derivation, where multiple movements within a single KP are crucial. A single set of case projections over the QP is a result of the diachronic change discussed in Rutkowski 2007 (see example (27) above).

- (35) a. Zobaczyłem pięć kobiet.
 saw_{1SG} five_{ACC} women_{GEN.PL}
 ‘I saw five women.’

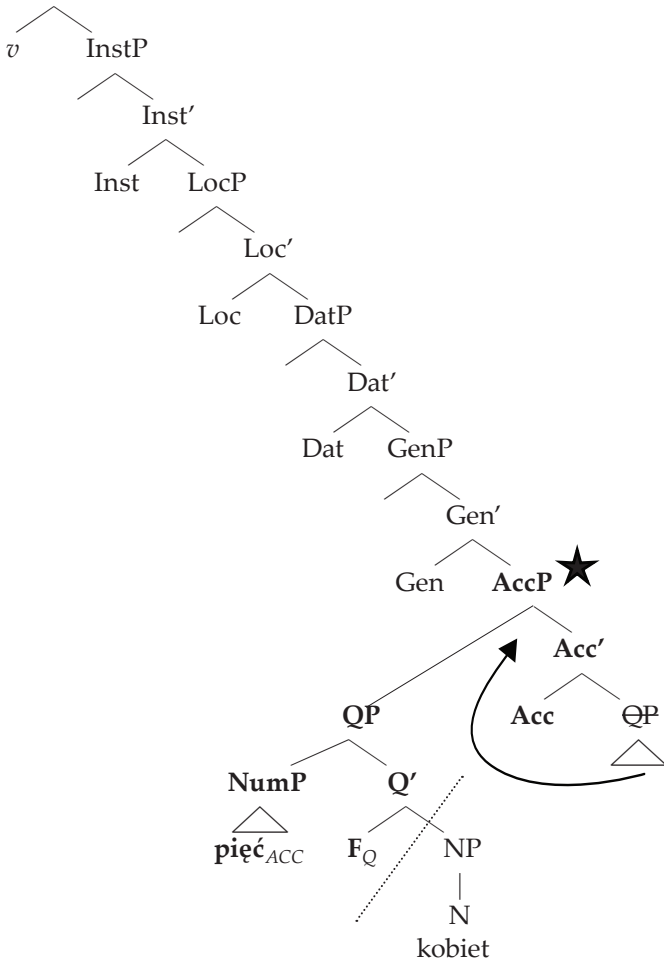
First, the accusative marker does not prevent the genitive marker from accessing the NP. Within one simple KP all cases are distinct from one another. Also, as the structures in (i–ii) demonstrates, successive cyclic movement within KP is an option. In such a movement step the Accusative Phrase (accusative marker) can be pied-piped with the NP to produce a well-formed Genitive suffix.

- (35) b. NumP is activated as a nominal element with a full set of ϕ -features and enters into a probe-goal relation with v .²⁸ As a result AccP is activated.

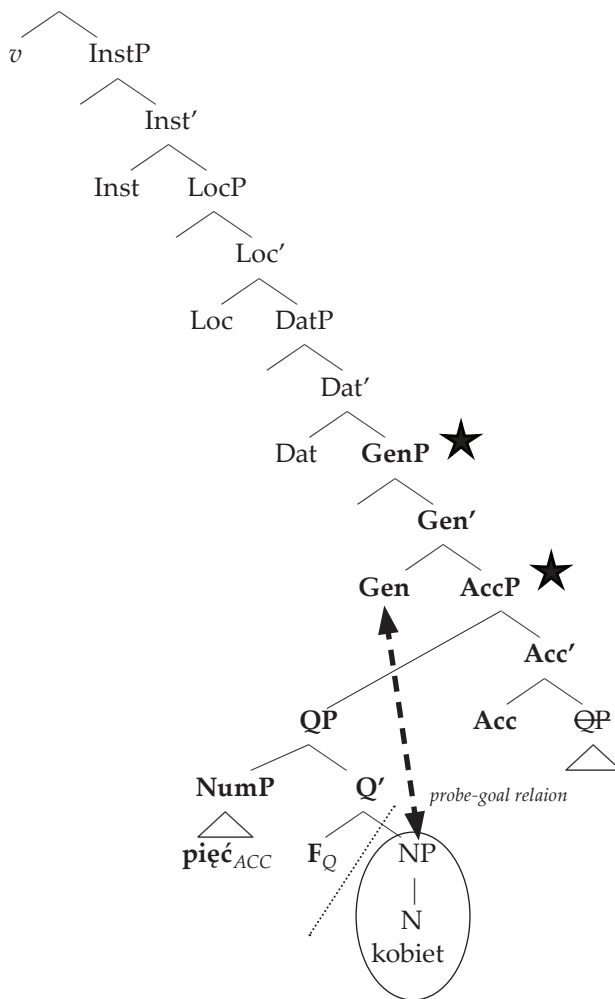


²⁸ The nominal and adjectival nature of Q heads is discussed in section 1.2. See, in particular, example (28).

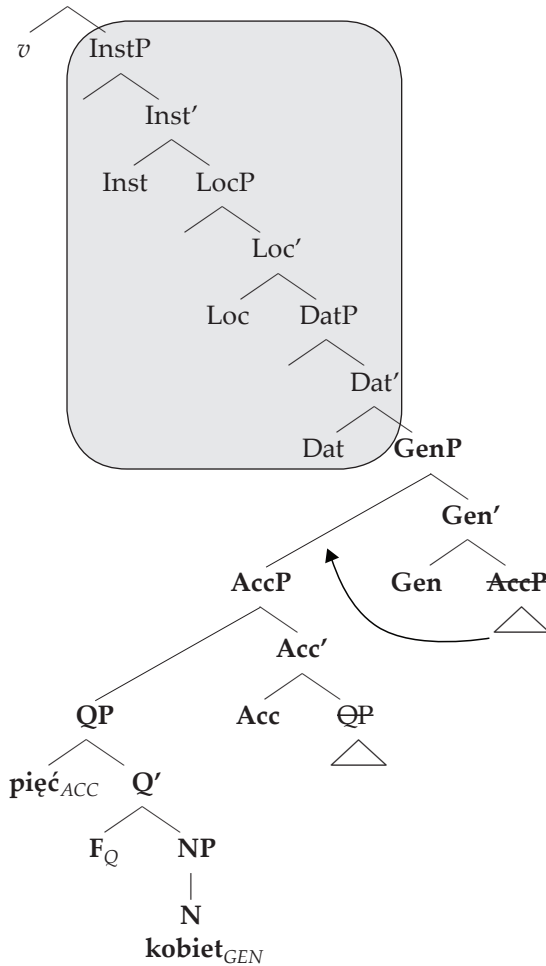
(35) c. QP moves to SpecAccP.



(35) d. NP enters into a probe-goal relation with Gen across QP.



- (35) e. NP moves to SpecGenP pied-piping [AccP QP] on top. The remaining case projections become deleted.



In the structure presented in (35) the nominal phrase, consisting of a noun, its modifiers, and the extended function projection (split KP), is selected as an argument. Then *v* accesses the TNP, gets into the relation Agree/feature sharing with it, and activates AccP in KP, as in (35b). At the same time, the higher numeral NumP is accessed by *v*/T_v, and its [_iperson] feature becomes activated, leading to the default setting of all other ϕ -features and turning NumP into an appropriate goal for *v*, as well as allowing it to license a nominal dependent. As a consequence, the entire phrase (QP including NumP) moves to the position within KP to appear in the case imposed by the external selector, e.g., *v* makes a QP move to SpecAccP, as in (35c). The NP

is pied-piped, but accusative case is not transmitted to the NP complement, which still requires another case in line with (34). The exceptional nature of this derivation lies in the fact that at this stage a single extended functional projection of N (KP) must service two heads bearing independent sets of ϕ -features: the new-born [+ ϕ] NumP and the original [+ ϕ] N. The relation between these two follows an otherwise attested path: a c-commanding nominal [+ ϕ] head causes the other nominal [+ ϕ] head (and its dependents within the same maximal projection) to appear in genitive. This is technically achieved in a Last Resort mode by the Genitive Case Projection, which is activated and accesses the NP across the case marked NumP, as in (35d). There are several reasons why the derivation should allow for this (nonlocal) relation. First, it takes place within the same extended nominal sequence, and no other probe external to the TNP is involved. Second, NumP is transparent to the probing from Gen to NP, as its case feature has already been valued. Likewise, the Accusative Phrase is transparent to the attraction of NP by the Genitive. Moreover, the Accusative Phrase including NumP is pied-piped in the movement of the NP to its genitive-licensing position, as in (35e). Third, the derivation in (35) evokes Richards's (1997) Principle of Minimal Compliance:²⁹ within one and the same set of case projections a more-local relation is established first (Acc – NumP) before a less-local relation is established (Gen – NP). Our account presupposes that there is no case overwriting in Polish (and related languages), and its morphology displays an application of a Genuine Single Suffix Rule: what you see is what you get. Q (and elements placed within its projection) receives accusative, while N (and elements placed within its projection) receives genitive.^{30,31}

²⁹ Principle of Minimal Compliance: For any dependency D that obeys constraint C, any elements that are relevant for determining whether D obeys C can be ignored for the rest of the derivation for purposes of determining whether any other dependency D' obeys C (Richards 1998: 601).

³⁰ We assume that the morphological component on the PF branch of grammar can correctly deal with the marking of both Num (NumP) with accusative and N (NP) with genitive, on the assumption that both the head-spec relation (accusative) and linear adjacency (genitive) are legitimate relations for morphology to operate on.

³¹ One of the consequences of our account is that the default adnominal case must be higher within the KP sequence than the initial structural case absorbed by the nominalized numeral:

- (i) The default adnominal case postulate: the default adnominal case projection is placed higher in the case hierarchy than structural cases.

A genuine challenge to the system of default case sketched above would come from a language implementing the mirror image of Polish (Russian) morphology, where structural cases do not trigger GoQ but inherent cases do. In a system based on (i) above this would mean that the marking for default adnominal case would require lowering, rather than raising. SC is not a mirror image of Polish (Russian) in this re-

A default T makes no claims on the features of Part, whereas both GenP and AccP are close(r) to Part on the strength of (36), providing it with a free option. Therefore Part can become involved in Agree and valuation either with AccP or GenP. As a result, the agreement of ϕ -features is optional.

In our analysis of the two alternatives for agreement, i.e., either with the numeral/quantifier in AccP or the head noun in GenP, presence of the genitive prequantifier adjoined to the QP may considerably alter the c-command equilibrium and, in turn, affect the configuration in (36) as a potential goal to the Part probe. Assuming that pre-quantifiers originate low in the structure, in a position adjoined to NP, and they are subsequently raised to a higher position for reasons of scope, the adjunction point of *tych* 'these' now becomes the key issue with respect to the standard view of adjunction to GenP (see Kayne 1994, 2002). In Polish the case of the demonstrative pre-quantifier or intensifier, i.e., accusative or genitive, does not correlate with the case suffix on the adjective/participle (see Przepiórkowski and Patejuk 2012 and Willim 2015 for more examples of this mismatch):

- (42) a. Te pięć studentek zostało wybranych.
 these_{ACC.PL} five_{ACC} students_{GEN.PL} was_{3SG.N} selected_{GEN.PL}
- b. Tych pięć studentek zostało wybrane.
 these_{GEN.PL} five_{ACC} students_{GEN.PL} was_{3SG.N} selected_{ACC.PL}
- 'These five students were selected.'

This case mismatch between the prequantifier and the participle shows that the demonstrative prequantifier cannot be adjoined on the outside of the case projections, e.g., GenP in (42b), as this would upset the equidistance relations in (36) and force genitive on the participle. We therefore submit that it becomes adjoined to QP/NumP, which is itself within a relevant case projection, and a variable timing and location of this adjunction vis-à-vis the movement of [_{QP} NumP_{ACC} F_Q [NP_{GEN}]] to relevant case projections is responsible for the two different case forms of *te* 'these_{ACC}' and *tych* 'these_{GEN}'. In order to account for the ambiguity in example (42), we would like to resort to the optionality in the timing of adjunction and the notion of a certain phase-internal countercyclicity. Starting with the latter, we argue that internal to a phase certain operations can be countercyclic and adjunction can violate the Extension Condition. Following the idea that the extended projection of the nominal constitutes a single phase,³³ the prequantifier or intensifier is free to move from the

³³ The phasehood properties of nominals have been discussed in, e.g., Matushansky 2005, Citko 2014, and Willim 2015 for Polish. Witkoś and Dziubała-Szrejbrowska (2014, 2015) argue for treating GoQ as phases whose Spell-Out is delayed because the complement to phase head (F_Q), i.e., NP, is still accessible to operations of narrow syntax at the point when QP is probed by the higher phase head.

NP-adjoined position either before or after the movement of [_{QP} NumP_{ACC} F_Q [NP_{GEN}]] within the KP area (see Lebeaux 1988, 1990, 2009; Chomsky 1995; and Stepanov 2001, 2007).³⁴ When the prequantifier is merged and adjoined to QP or NumP, its case is accusative as a member of the projection headed by F_Q; see (34) and (43). This operation has little bearing on the structure in (36) and the possibility of two-pronged Agree. The prequantifier can also be adjoined to NP and stay there until the complex [_{QP} NumP_{ACC} F_Q [NP_{GEN}]] has moved to SpecGenP. It is then marked for genitive in line with (34). Afterwards it moves and adjoins to QP (or NumP); see (44). Its landing site is uniform and has no bearing on the case of the participle and the structure in (36):

- (43) [_{GenP} [_{AccP} [_{QP} te_{ACC} [_{QP} pięć_{ACC} [_{FP} F [_{NP} dziewczyn_{GEN}]]]]] Acc]
Gen]

these_{ACC} five_{ACC} girls_{GEN}
'these five girls'

- (44) these_{GEN} five_{ACC} girls_{GEN}

- a. [_{GenP} Gen [_{AccP} Acc ... [_{QP} pięć [_{FP} F [_{NP} te [_{NP} dziewczyn]]]]]]]
b. [_{GenP} Gen [_{AccP} [_{QP} pięć_{ACC} [_{FP} F [_{NP} te [_{NP} dziewczyn]]]]] Acc]
c. [_{GenP} [_{AccP} [_{QP} pięć_{ACC} [_{FP} F [_{NP} tych_{GEN} [_{NP} dziewczyn_{GEN}]]]]] Acc] Gen]
d. [_{GenP} [_{AccP} [_{QP} tych_{GEN} [_{QP} pięć_{ACC} [_{FP} F [_{NP} tych_{GEN} [_{NP} dziewczyn_{GEN}]]]]] Acc] Gen]

A derivation similar to example (44) is also applicable to constructions in which the genitive-marked adjective intensifier is taken to modify the accusative-marked numeral.³⁵ This effect is achieved by adjoining the adjective intensifier to NumP via movement. Such derivations occur alongside the more expected pattern, as in (47–48), where the adjective agrees in case with the numeral it modifies:

- (45) dobrych pięć butelek
good five bottles

³⁴ Crucial phenomena in the reconstruction in A'-movement involve these classic analyses, where the timing of adjunction with respect to movement is shown to be more liberal than in the case of Set-Merge.

³⁵ A reviewer for *JSL* points out that our account allows for movement of the demonstrative independent of the nominal nucleus of TNP, which is in conflict with Cinque 2005. We acknowledge this problem, but Cinque (2005, 2010) also allows for certain exceptions to his strict movement procedures, e.g., in focus movement.

- (46) a. [GenP Gen [AccP Acc ... [QP [NumP pięć [F_Q [NP dobre [NP butelek]]]]]]]]
 b. [GenP Gen [AccP [QP [NumP pięć_{ACC}] [F_Q [NP dobre [NP butelek]]]] Acc]]
 c. [GenP [AccP [QP [NumP pięć_{ACC}] [F_Q [NP dobrych_{GEN} [NP butelek_{GEN}]]]] Acc] Gen]
 d. [GenP [AccP [QP [NumP dobrych_{GEN} [NumP pięć_{ACC}]] [FP F_Q [NP ~~dobrych~~_{GEN} [NP butelek_{GEN}]]]] Acc] Gen]
 good_{GEN} five_{ACC} bottles_{GEN}
 ‘a good five bottles’

- (47) dobre pięć butelek
 good five bottles

- (48) [GenP [AccP [QP [NumP dobre_{ACC} [NumP pięć_{ACC}] [F_Q [NP butelek_{GEN}]]]]]]
 Acc] Gen]
 good_{GEN} five_{ACC} bottles_{GEN}
 ‘a good five bottles’

Our account of (46) harks back to Corbett (1979), who proposes a rule of Adjective movement to capture this phenomenon.³⁶ Both adjunction sites (QP and NumP) are available to demonstrative prequantifiers as targets of base adjunction and movement, producing either the specific readings, as in (49a–b), or partitive readings, as in (49c–d):

³⁶ Corbett (1979: 2) analyzes examples such as:

- (i) [NP [celyx NP pjat’] [NP t_A časov]]
 whole_{GEN} five_{NOM} hours_{GEN}
 ‘a whole five hours’

He argues in favor of the rule of adjective movement to preserve the idea of the locality of the adjective-noun agreement in complex nominal constructions; Russian grammar has the option of moving certain adjectives out of the lower NP after they have agreed in case. Corbett (1979: 3–5) also proposes a parametrized operation of genitive insertion in constructions like (i), which effectively turns the numeral/quantifier from an adjective-class member to a noun-class member in some Russian numeral phrases. Pesetsky (2013) accounts for (i) in a similar fashion, via movement of the adjective synchronized with the Q-to-D adjunction, although he adjoins the adjective to the main line of the DP projection.

- (49) a. te [pięć butelek]
 these five bottles
- b. tych [pięć butelek]
 these five bottles
- c. [te pięć] butelek
 these five bottles
- d. [tych pięć] butelek
 these five bottles

4. Conclusion

The nanosyntactic approach via structural means shows the specificity of the GoQ construction. Its derivation begins as a single nominal constituent headed by N and insulated within a single functional sequence ([_{Case} Projections ... [QP Num(P) F_Q [NP N]]]). In order to cope with a situation in which NumP in structural-case contexts becomes activated as a bearer of the full set of ϕ -features and thus requires its own case independent of the core nominal N, a sequence of case-driven movements within a single set of case projections is posited. First, the complex [QP NumP F_Q [NP N]] is raised to SpecAccP to satisfy the case requirements of its NumP part, and next NP (pied-piping the entire QP above it) is raised to SpecGenP. The double satisfaction of the case requirements within a single set of case projections produces the distinct potential for case-feature checking of the participle and predicative adjective in the representation in (36). Significantly, this derivation is distinct in its steps and outcome from both the derivation where the numeral expression is an adjectival modifier (see (25b)) and the derivation where the numeral expression is a *prima facie* nominal (see (25a)).

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