DIALECTICS OF ADNOMINAL MODIFIERS : ON CONCORD AND INCORPORATION IN NOMINAL PHRASES

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1. Introduction[1]

Many languages display several adnominal possessive constructions whose distribution may depend on various factors such as the type of the possessum, the type of the relation and the type of the possessor (see Seiler (1983); Lehmann (1998, Ch. 1); Koptjevskaja-Tamm (2003) and (2004); Graschenkov (2006) among many others). The last of these factors is especially prominent, since it can be seen with the naked eye almost everywhere, i.e. almost everywhere we find morphosyntactic differences between various kinds of possessors. The aim of this paper is to argue that the parameter of the possessor's type not only is responsible for the existence of such *possessive splits*, but also can determine what morphosyntactic devices are used in possessives. I will focus mainly on NP-internal agreement, or concord, although other means of coding possessors (first of all, NP-internal incorporation) will also be touched upon here. Moreover, a few hypotheses to be made concerns not only possessives, but also some other attributive constructions.

Note that possessives are understood here broadly enough to include also some expressions that are not always counted as possessives (e.g., *silver spoon*), yet cross-linguistically regularly display morphosyntax of this kind of constructions. In general, possessives can be considered the most unmarked construction that reflects the relations between individuals (rather than between individuals and events). The prototypical possessive, furthermore, is used in order to establish the reference of the possessum via the possessor. Naturally, since individuals are normally referred to by nominals, it is likely that a possessive includes two nominals, but in some cases (especially where NP-internal agreement is present) this is questionable. Consequently, possessives are understood here more functionally than syntactically. The same disclaimer applies in fact to the notion of attributive construction and to the terms *attribute*

/ *modifier* and *head* (which are mostly used here for notional modifiers and notional heads respectively).

I will start with a discussion of possessives in Andic languages of the Northeast Caucasian family. In Section 2 I will argue that at least in the diachronic perspective the distribution of agreeing and non-agreeing possessives in these languages depends on the topicality of the possessor. Section 3 will show that the effects of those marking principles that are at work in Andic languages are by no means restricted to them. In Section 4 I will demonstrate that similar principles are relevant for NP-internal incorporation, which may provide a link between concord and the degree of tightness of an attribute to the head. In Section 5 it is suggested that the parallels between NP-internal incorporation and concord are based on their inherent relatedness. Section 6 presents the principal conclusions and discusses open ends.

2. Possessives in Andic languages

All Andic languages (namely Akhvakh, Andi, Bagvalal, Botlikh, Chamalal, Godoberi, Karata and Tindi) display more than one possessive construction[2]. All of them are characterized by preposed possessors[3] and dependent-marking. The main difference between the relevant patterns concerns the nature of marking : the possessor can agree with the possessum in class and number, or it can be marked with an invariable genitive suffix, which is reconstructed as *-ƛ:i* for Proto-Andic (Alekseev (1988, 80)). Cf. the following Akhvakh examples, where (1) illustrates an agreeing construction and (2) shows a genitive pattern [4]:

Akhvakh (Magomedbekova (1967a, 54))

(1) a. *waš-o-be*   *ʁoča*
          boy-O-N:SG   book
          '(my) son's book'

     b. *waš-o-je*   *jac:i*
          boy-O-F:SG   sister
          "(the) boy's sister'

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[2] Andic data are taken from published sources, which include above all several grammars (Cercvadze (1965) ; Magomedbekova (1967a) ; (1971) ; Kibrik *et al.* (eds) (1996), (2001)) and a few essays in Bokarev *et al.* (1967).
[3] In the variety of Godoberi described in Kibrik *et al.* (1996), heavy possessors modified by a relative clause can follow the possessum.
4 Abbreviations used in glosses : ABS – absolutive, ADJ – adjectivizer, CS – construct state, DAT – dative, DU – dual, EMP – emphatic, F – feminine, GEN – genitive, HUM – human, IMP – imperative, INCL – inclusive, IRR – irrealis, M – masculine, N – neuter, NOM – nominative, O – oblique stem suffix, OBL – oblique marker, PL – plural, POSS – possessive marker, PR – possessor, PST – past, SG – singular. Roman numbers denote noun classes, while Arabic numbers refer to persons.

(2)   Akhvakh (Magomedbekova (1967a, 54))
jac:-o-ƛ:i   *ƛ'õko*
sister-O-GEN   dress
"(my) sister's dress"

According to Magomedbekova (1967a), the distribution of these two patterns relies on the noun class of the possessor. All Andic languages divide nouns into several classes : Rikvani Andi has six classes, other Upper dialects of Andi and Chamalal have five classes, while the remaining Andic idioms have three classes. The distinctions that are most relevant for the present paper include those between the human masculine class, the human feminine class and others (usually glossed here as *neuter*). In plural the opposition between the masculine and feminine classes is neutralized (except in Andi) and this leads to a more general opposition between human and neuter nouns. Now, in Akhvakh the genitive construction (2) is used with non-masculine possessors in singular and neuter possessors in plural, while the agreeing pattern appears with masculine singular and human plural possessors. In addition, agreement is found with personal pronouns and with the human interrogative pronoun. Nominalized attributes including demonstrative pronouns (which can function as anaphoric devices) choose a possessive construction according to the class of the referent.

The relation between the possessor's noun class and the choice of a possessive construction is found in other Andic languages as well. However, the closer inspection shows that this relation is not always strong.

For example, in Godoberi the agreeing pattern appears with singular masculine possessors only if they contain the oblique marker *-š:u*,[5] while singular masculine possessors that do not receive this suffix take the genitive suffix ; cf. the possessive forms *hekʷa-š:u-b* (man-O-N:SG) and *im-u-ƛ:i* (father-O-GEN) from Gudava (1967a, 312)[6]. The suffix *-š:u* is obviously associated with the masculine class, but its basic function in the Andic group[7] is substantivation (cf. Alekseev (1988, 66-68)) : it is the default oblique marker for nominalized attributes referring to males. Consequently, in Godoberi there are a number of genuine masculine nouns that do not take it and hence cannot be marked with agreement morphology.

While in Godoberi the agreeing construction with singular possessors is restricted only to some members of the masculine class, in some other Andic languages it is also found with feminine nouns. Thus, Bokarev (1949, 45) reports

[5] Oblique markers in Andic languages form stems which take (non-absolute) case morphology.
[6] Magomedbekova (1967b) made the same claim for Karata, but her later (1971) grammar of this language does not mention this restriction and in fact provides a number of counterexamples to it. On the other hand, as concerns Godoberi, Dirr (1909, 12) gives for *ima* 'father' parallel genitive and agreeing forms, which do not contain the oblique suffix *-š:u*.
[7] In Akhvakh and Chamalal the cognate suffix is *-s:u*.

that in Chamalal some feminine proper names allow for the agreeing pattern. In Kvanada Bagvalal, where the distribution of possessives for the most part relies on class distinctions, Daniel (2001, 149) finds possessive agreement for some (although by no means all) toponyms. In addition, Gudava (1971, 223) notes that in Tlisi Bagvalal the agreeing pattern is also used with feminine nouns taking the oblique suffix *-ł:i*. Interestingly, throughout Andic languages this morpheme usually appears in feminine oblique stems exactly if their masculine counterparts contain the affix *-š:u* (cf. Alekseev (1988, 68-69)).

Finally, in some Andic languages a phenomenon is observed whereby one and the same possessor nominal can take either agreement inflection or the genitive suffix. For example, Gudava (1961, 133) and (1967b, 372) registers infrequent instances of the use of the genitive with Botlikh and Tindi singular masculine nouns, which normally choose the agreement strategy of possessive marking. Gudava considers these instances to be a matter of mistake and states that «one and the same word cannot have two forms (i.e. the agreeing form and the genitive form (YL)) (in one and the same number)» (Gudava (1961, 133); translation is mine). However, Chamalal data presented in Bokarev (1949) suggest that this principle does not hold for this language and this makes it possible that it is not so strong in its relatives. In Chamalal, singular masculine nouns can have either form, partly depending on specificity or definiteness: specific possessors prefer the agreement strategy (3a), and non-specific possessors choose genitive marking (3b) (see also Koptjevskaja-Tamm (2004, 166-167) with reference to Ol'ga Boguslavskaja's work).

(3)   Chamalal (Bokarev (1949, 45))
    a.   *čerges-i*   *jaƛ'čal*
          Circassian-v:SG   belt[v]
          «the Circassian's belt»

    b.   *čerges-i-ƛ*   *jaƛ'čal*
          Circassian-O-GEN   belt[v]
          «the Circassian belt»

Summing up the facts given so far, at least Godoberi, Chamalal and Bagvalal provide evidence against the idea that the choice between different possessive constructions in the Andic group is based exclusively on the class characteristics of the possessor noun. Rather some other factor should be found which motivates or motivated the distribution of Andic possessives.

I suggest that this factor is the possessor's topicality. The term *topicality* refers here to the position of a nominal in the hierarchies listed in (4). It is important that topicality cannot be subsumed under a single hierarchy, since the hierarchies (4) cannot be arranged relatively to each other in a uniform way (see Croft (1990, 112ff.) for a similar approach).

(4) a. NP-type: Pronouns > Proper nouns > Common NPs
     b. Person: 1st and 2nd person > 3rd person
     c. Animacy: Human > Non-human animate > Inanimate
     d. Referentiality: Definite > Specific indefinite > Non-specific
     e. Individuation: Singular > Plural > Mass > Non-individuated

Out of these five hierarchies, three are involved in the case of Andic possessives. The NP-type hierarchy manifests itself in all Andic languages, since in all of them pronominal possessors require concord, while only some common NPs allow it. The importance of this hierarchy is even clearer in Chamalal and Bagvalal, where some proper nouns behave just like pronouns in this respect. The role of the animacy hierarchy is apparent for plural possessors, where human possessors only are associated with the agreeing pattern. Finally, the referentiality hierarchy is relevant for Chamalal, where the choice of a construction can be based on definiteness and / or specificity. Consequently, the following principle can be proposed (H here and below is a mnemonic for "hypothesis") :

(H1)   Concord is preferred for more topical possessors.

Nevertheless, this does not mean that the possessor's topicality is the leading factor influencing the distribution of Andic possessive constructions. For example, (H1) does not explain why the agreeing pattern is restricted to certain stem types in Godoberi and Tlisi Bagvalal, neither can it suggest why masculine possessors are more likely to agree than feminine ones. But there are also other problems that Andic languages pose for (H1).

First, in some varieties of Andic languages the agreeing pattern is disappearing. Thus, for the dialect of Godoberi described in Kibrik *et al.* (1996), it is found only in those cases where the possessum is neuter singular (cf. (5)); note that in these examples the absence of concord does not imply the presence of the genitive :

(5)   Godoberi (Tatevosov (1996))
      a.   *ha-rdu-b   χuri*
           he-O-N:SG   field
           «their field»
      b.   *ha-rdu   χuri-be*
           he-O   field-PL
           «their fields»
      c.   *ha-rdu   wac:i*
           he-O   brother
           «their brother»

Similarly, Magomedbekova (1967a, 54) observes that in Akhvakh «it is frequent that forms of the class genitive [i.e. agreeing forms – YL] are found without class marker : *išwas:u* 'the shepherd's' instead of *išwas:u-be*, *imo ʁoča* 'the father's book' instead of *imo-be ʁoča*. This phenomenon should be attributed to a specific feature of Akhvakh, whereby in the context the class marker at the end of the word can be reduced» (translation is mine). Certain variation between the use of agreeing forms and *zero-marked* forms in Akhvakh is confirmed by Kibrik & Kodzasov (1990, 263) and Boguslavskaja (1995, 236-237)[8], but in fact, already Dirr (1909, 35) noted that Akhvakh possessive pronouns do not show concord.

Second, besides class / number agreement discussed above, some Andic languages display another kind of possessive concord, whereby an agreeing plural suffix can be added to the inflection of a possessor. This pattern is found with both agreeing and genitive possessors. Cf. (6) from Andi, (7) from Karata and (8) from Chamalal (where such concord is optional), the three languages for which I am aware of this phenomenon :

(6)   Andi (Cercvadze (1965, 331-332))
   a.   *im-u-v-ul*   *voc:-ul*
        father-O-M-PL   brother-PL
        «(the) father's brothers»
   b.   *il-u-ƛ:-ol*   *voc:-ul*
        mother-O-GEN-PL   brother-PL
        «(the) mother's brothers»

(7)   Karata (Magomedbekova (1971, 59))
   a.   *im-o-r-aj*   *qoč-ibi*
        father-O-N:PL-PL   book-PL
        «(the) father's books»
   b.   *jaše-ɬ:i-ƛ:-aj*   *qoč-ibi*
        mother-O-GEN-PL   book-PL
        «(the) mother's books»

(8)   Chamalal (Bokarev (1949, 46, 126))
   a.   *di-v*   *halmaʁ-i-b-e*   *jac-be*
        I:O-M:SG   friend-O-HUM:PL   sister-PL
        «my friend's sisters»
   b.   *hida-ƛ-e*   *ʕoloqa-me-di*
        Gidatli-O-PL youth-PL-ERG
        «Gidatli youths»

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[8] According to Boguslavskaja, the presence of concord inflection in Akhvakh emphasizes the possessor. Notably, the phenomenon whereby an agreeing construction is used for emphasis in contrast to non-agreeing constructions is found all over the world.

Such agreement in number only, of course, does not contradict (H1), yet it can partly invalidate some arguments in favor of it. If we take this principle in its current formulation, for Andi, Karata and Chamalal it becomes unprovable, since here all kinds of possessors show agreement. Nonetheless, intuitively the pattern illustrated in (6)-(8) is somewhat different, and it is more likely that it is (H1) that needs some clarification.

The main blow in (H1) is delivered, however, by Akhvakh itself. Magomedbekova (1967a, 54) notes that in this language suffixes marking the class and number of the possessum can be attached even to genitive forms, in which case the possessor becomes non-specific, contrary to (H1). Thus, compare the following two expressions, of which the first contains a simple genitive form and the second an agreeing genitive :

(9)   Akhvakh (Magomedbekova (1967a, 54))
   a.   *jaše-λ:i*   *λ'õko*
        girl-GEN   dress
        «(the) girl's dress»

   b.   *jaše-λ:i-be*   *λ'õko*
        girl-GEN-N:SG dress
        «(a / the) girl dress»

Magomedbekova suggests that examples of attributes such as that in (9b) represent adjectives derived from genitive forms. Indeed, in all Andic languages there are adjectives that agree with their heads in the attributive construction, and this pattern could spread to non-specific genitives. The statement (H1), however, does not contain any reference to the syntactic category of a modifier (unless the possessor is not thought to be expressed exclusively with nominals), and this is not by chance. It is normal for Northeast Caucasian genitives to refer to many kinds of meanings, which often are conveyed with adjectives in other languages (e.g., Akhvakh *čanaλ:i* 'wild', which is essentially the genitive form of *čani* 'game' (cf. Boguslavskaja (1995, 233) and Koptjevskaja-Tamm (2004, 158ff)). Since there are no good criteria for distinguishing between possessive and adjectival constructions in this case, it does not make sense to mention this distinction here at all. Anyway, the Akhvakh examples like (9b) do undermine (H1), which therefore needs some reformulation. The next section will demonstrate how this reformulation may look like[9].

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[9] For the sake of completeness, it should be noted that there exist other possessive constructions in Andic languages. In Karata pronominal possessors can attach a special suffix *-al* to their agreement morphemes ; cf. *iλ:i-b-al unsa* (we:INCL-N:SG-*al* bull) 'our bull' (Magomedbekova 1971, 113). This construction is not related to the topic of the present paper, however. In Godoberi there is also a special construction used with non-specific possessors, see Section 3.

3. A typological perspective

Possessive constructions are generally recognized as a marked type among attributive constructions. This is motivated by the fact that the syntactic function of modification is typical for adjectives but not for nominals (cf. Croft (1991)). In many languages (including English), this finds an apparent formal manifestation, since for them, the following principle can be hypothesized :

(H2)   If a possessive construction can lack special marking, then so does an adjectival construction

This principle is not universal (for reasons that will become clear later), but it is true for a significant number of languages (probably, for the majority of them) and cannot be ignored. However, this tendency is manifested more for highly topical possessors. Those possessors that occupy lower positions in the hierarchies (4), on the other hand, quite often behave similarly to adjectives. In English, for example, adjectival attributes are unmarked, and so normally are non-specific possessors (such as *silver* in *silver spoon*). Specific possessors, however, do receive overt marking either by the possessive clitic *'s* or by the preposition *of.* Similarly, according to Kibrik *et al.* (1996), non-specific possessors in Godoberi sometimes can be unmarked (specific possessors are marked by the genitive, agreement morphology or at least by the oblique suffix), and the same holds for adjectives (cf. such examples as *beːl ihur* 'mountain[ous] lake' and *hac'a χʷaji* 'white dog'). Crucially, this supports the view introduced at the end of the previous section that the distinction between adjectival constructions and possessives is not clear-cut. Rather, I suggest, it can be represented in the form of the following Modifier Scale :

less topical modifiers   more topical modifiers

⟵————————————————————⟶

Adjectival constructions   **Possessive constructions**
characterizing   establishing
the referent   the reference

As the figure makes it clear, there are at least two properties that correlate with this scale :

(i) First, it is the function of a modifier. The prototypical possessives are used for establishing the reference of the head, while the prototypical adjectival constructions are intended to somehow characterize it. The former are highly restrictive, which often leads to definiteness or specificity of the possessum, while this cannot be said of the latter. Adjectival constructions are at best restrictive and the most typical adjectives fail to fulfill even this function: the semantics of most basic adjectival concepts from the classical Dixon's (1977) list

(namely of those of dimension, age and value) is based on the subjective estimation and hence cannot be restrictive enough[10].

(ii) Second, it is a modifier's topicality. As has been already said, the prototypical possessor is highly topical. In most theories of possessives it is human, and some theories – such as Seiler's (1983) one – even associate it with some concept of EGO. As for adjectives, they are closer to predicate nominals, whose topicality is very low (if it is possible at all to speak of their topicality).

In this perspective, the distribution of concord in Andic languages would be more accurately represented by something like (H3) :

(H3) NP-internal agreement is preferred for constructions that are closer either to the prototypical possessive or to the prototypical adjectival construction.

Although at first glance this statement is surprising (for the prototypical possessives and the prototypical adjectival constructions constitute the opposite ends of the scale), it can be shown to hold not only for the Andic group but also for many other languages that make use of agreement within NPs.

In relation to this, it is worth saying that something like (H3) has been already proposed in literature for a subtype of NP-internal agreement, namely for the phenomenon of *Suffixaufnahme*, whereby a possessor displays case agreement being simultaneously marked for its own possessive role[11], as in the following example from Evenki (Tungus) :

(10) Evenki (Nedjalkov (1997, 210))

Mit-ngi-l-du   *tatkit-yl-du-t*   *aja-l*   *alagumni-l*
we:INCL-POSS-PL-DAT   school-PL-DAT-PR.1PL:INCL   good-PL   teacher-PL

«Teachers in our schools are good»

The relevant generalizations concerning *Suffixaufnahme* are formulated by Moravcsik (1995) in the following way :

(i) in all languages, if *Suffixaufnahme* occurs with nominal possessors, it also occurs with pronominal ones (p. 470 ; see also Plank (1995, 75-76); Schweiger (1995, 359); Koptjevskaja-Tamm (2003, 637));

(ii) if a language has *Suffixaufnahme*, then adjectives agree with their heads in the same category (p. 474).

The first of these statements clearly relates the occurrence of *Suffixaufnahme* to one of the topicality hierarchies (namely to that of the NP-type), while the

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[10] The most restrictive of the supposed basic adjectives are color terms, but their inclusion in Dixon's list is by no means apparent (cf. Wetzer (1996, 10)).

[11] Actually, while this is the prototypical instance of Suffixaufnahme, this concept is somewhat more complex ; see especially Plank (1995).

second is close to (H3)[12]. It therefore remains to demonstrate that (H3) is not restricted to *Suffixaufnahme* and to the NP-type hierarchy.

That (H3) concerns not only *Suffixaufnahme* is evident from the fact that there are many languages where this statement holds, yet possessors are not marked as such by means other than agreement (so there is no *double marking* characterizing *Suffixaufnahme*) and / or both possessors and adjectives agree in categories other than case. These conditions are satisfied, for example, in many Romance languages, where adjectives and possessive pronouns are marked exclusively by agreement inflection expressing primarily number and gender, while those possessors that are closer to the middle of the Modifier Scale do not show concord. The same picture is found in Tiwi, an Australian non-Pama-Nyungan language: (11a) and (11b) show that adjectival attributes and pronominal possessors can agree with the head, and (11c) demonstrates that possessive constructions used for other possessors do not involve concord.

(11)   Tiwi (Osborne (1974, 73, 55, 75))
    a.   *pumpu-wi   pəlaŋəmwa-wi*
          good-PL   dog-PL
          «good dogs»

    b.   *ŋəni-ŋilawa   pəlaŋəmwa-ni*
          M:SG-I:EMP   dog-M:SG
          «my (male) dog»

    c.   *ŋara   punajiŋa   jərəkati*
          he   wife   *Jərəkati*
          «*Jərəkati*'s wife»

While Tiwi and most surviving Romance languages (Rumanian being an exception) restrict possessive agreement to pronouns, there are also languages similar to Andic ones, where the appearance of such agreeing patterns is determined by hierarchies other than the NP-type hierarchy. Thus, in the Papuan (Sepik-Ramu) language Yimas, the distribution of possessive constructions is based on animacy. Animate possessors are introduced by a particle *na*, which can (albeit need not) agree with the possessum in noun class and number (12a), while inanimate possessors receive the oblique suffix and do not exhibit concord (12b). Yimas adjectives optionally take concord suffixes (12c) like animate possessors.

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[12] The second generalization is clearly stronger than (H3), since it postulates the preference for adjectives to agree with their heads. In reality this holds for most other concord patterns but is not exceptionless. Judging from a very short description (Edelman (1999)), in Maiyon (Dardic), possessive pronouns agree with their heads, while adjectives do not. Interestingly, most languages that are closely related to Maiyon do have adjectival agreement.

(12)   Yimas (Foley (1991, 179, 185))

    a. *tuŋkntuma*   *na-kn*   *marm*
       possum[III:SG]   POSS-V:SG   smell[V:SG]
       «smell of a possum»

    b. *mlmp-n*   *marm*
       feces[VII:SG]-OBL   smell[V:SG]
       «smell of feces»

    c. *panmal*   *narmaŋ*   *yua-mampan*
       man[I:SG]   woman[II:SG]   good-I:DU
       «good man and woman»

Finally, Slavic languages provide a nice illustration of how different topicality hierarchies can go together in delimiting the scope of NP-internal agreement. In these languages adjectives agree in case, number and gender, and so typically do 1st and 2nd person possessors. In addition, Slavic languages have a special class of so-called *possessive adjectives*, whose membership is determined mainly by animacy, definiteness and number (they are restricted to singular and often also to human / animate and definite possessors) and which too show agreement (see Corbett (1987) and (1995) for a detailed description and bibliography). Cf. the Russian example (13):

(13)   Russian
    starux-in-y   *molitv-y*
    old woman-POSS-NOM:PL   prayer-NOM:PL
    «the / *an old woman's prayers»

Obviously, Slavic languages support the claim that it is not only the NP-type hierarchy that determines the targets of agreement in possessive constructions, but also the hierarchies of definiteness, animacy and individuation. Moreover, unlike other pronominal dependents, Russian 3rd person pronominal possessors are marked for genitive only, therefore providing evidence for the relevance of the person hierarchy as well. Interestingly, non-specific possessors are usually expressed in Russian by *relational adjectives* such as *bronz-ov-yj* (bronze-ADJ-NOM:SG :M) 'bronzy'. This makes the Russian system similar to that found in Akhvakh, where the adjectival pattern also spreads to those possessors that are most distant from the possessive prototype.

Summing up the facts given so far, (H3) is indeed true for a number of unrelated languages, where concord is preferred for adjectival constructions and sometimes also for non-specific possessors, on the one hand, and for the most topical possessors, on the other hand (albeit this does not mean that (H3) is exceptionless, see below). Therefore Andic languages are by no means unique in this respect.

To conclude this section, it is worth mentioning that some Romance pronominal paradigms may provide a clue to another mystery related to Andic languages. In French, singular possessive pronouns agree in gender and number, while plural pronominal possessors only show number concord. Since plural possessors are lower in topicality than singular ones, this is suggestive of the hypothesis that NP-internal agreement in number only is more available for less prototypical possessors than agreement in gender or noun class. This could explain the facts of Andi, Karata and Chamalal, where less topical possessors show agreement in number but not in class.

4. Concord, incorporation and bondedness

The use of the same marking pattern for opposite functions deserves an explanation. One widespread approach to such problems is based on the idea that the opposite functions need not be distinguished overtly just because they are so opposite that any confusion is excluded. For example, it can be suspected that special possessive marking is really needed only where possessives cannot be neatly contrasted to adjectival constructions, or in other words, where a dependent is not a prototypical possessor. The main shortcoming of this *economy-based* approach is that this principle does not work in many languages without NP-internal agreement. At the same time, this approach says nothing about the relations between the position of the modifier in the Modifier Scale and any concrete morphosyntactic devices such as agreement.

Another line of explanation links the distribution of agreement with similarities that are observed between the most topical and the least topical nominals. Thus, Hopper & Thompson (1984) argue that both these classes are low in discourse prominence and have little syntactic autonomy. Within their framework, it could be suggested that such nominals reveal features like agreement (which is thought to be atypical for nominals), because they deviate from the nominal prototype (for Hopper and Thompson it is «the introduction of participants and 'props' and their deployment»). Yet, concord is not always accompanied by the reduction of nominal features. Thus, as we saw for Yimas, possessive agreement can appear not on the possessor nominal itself but on an analytic marker, and it is doubtful that in this case the possessor nominal has less nominal features than when it introduces a participant. Moreover, as the Slovak example with a Slavic *possessive adjective* (14) shows, sometimes the target of NP-internal agreement can even have its own dependents, which points to the fact that it remains more or less autonomous syntactically:

(14)   Slovak (Plank (1995, 79))
        náš-ho   *dobr-ého*   *sused-ov-a*   *záhrada*
        our-GEN:SG:M   good-GEN:SG:M   neighbour[M]-POSS-NOM:SG:F   garden[F](NOM:SG)
        «the garden of our good neighbour»

The idea pursued here is, however, similar to the one just presented in that it insists on the relevance of similarities rather than differences between the ends of the Modifier Scale. More concretely, I suggest that the use of agreement reflects a higher degree of bondedness between an attribute and the head and that the opposite ends of that scale are inclined to demonstrate more bondedness with the notional head.

The concept of (syntactic) bondedness was first introduced by Foley (1980). It is based on the empirical observation that within complex nominals some modifiers can be associated with the head more tightly than others, which is reflected in particular in variation concerning the presence / absence of syntactically relevant marking. My point is that similar variation in bondedness can be observed if we consider possessives, that is different possessors are tied to the head to different degrees.

Some related facts were discussed in Lander (2004), where I argued that those possessors that convey information more relevant to the utterance are less integrated into NPs. Interestingly, although both highly-topical and lowly-topical possessors can behave this way, the most typical of *relevant possessors* are exactly those that occupy the middle of the Modifier Scale, i.e. those for which NP-internal agreement is least likely. But more revealing is the picture that we observe with NP-internal incorporation.

Here I use the term *incorporation* rather loosely, subsuming any of the following phenomena, which often (but not always) go together and apparently manifest tightness to the head :

(i) phonological deficiency of a modifying expression[13], which means that this expression forms a single phonological word with its head or at least their combination follows morphonological rules that are not typical (in a given language) for the syntactic level;

(ii) morphological deficiency, most usually the absence of (morphological or analytic) marking pointing to the function of a modifying expression, and

(iii) syntactic deficiency, which implies strong constraints on the position of a modifying expression in respect to the head and often also its incapability of being syntactically complex[14].

(Since some of the features (i)-(iii) can be absent in a given construction, incorporation can be represented as a scalar phenomenon: an expression can be more or less incorporated, depending on how many features and perhaps what features the construction shows. Note also that in this understanding of

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[13] By *modifying expression* I understand any expression that describes an attribute, be it bound (as is usually the case with cross-reference morphemes) or free. This entails that an attribute can have several expressions in a single phrase. This may have parallels in other fragments of grammar : for example, in West Greenlandic, parts of constituents affected by clause-level incorporation can remain unincorporated (Van Geenhoven (1998, 17-22)).

[14] Importantly, all of these features are relevant only when different dependents display different characteristics in respect of the corresponding parameters.

incorporation, an incorporated item can even retain dependent-marking, for none of these features is obligatory).

When this broad notion of incorporation is applied to adnominal attributes, we find a tendency which we are already familiar with[15]:

(H4) NP-internal incorporation is preferred for constructions that are closer either to the prototypical possessive or to the prototypical adjectival construction

I will start illustrating (H4) with those constructions that are closer to the possessive prototype. First, note that cross-reference (which implicates incorporation in our sense) is favored when possessors are highly topical, i.e. they are most prototypical (cf. Nichols (1988, 580-581))[16]. But of course, cross-reference is not the only basis for (H4), since free possessors can exhibit features of incorporation as well. In predominantly head-marking Adyghe (Northwest Caucasian), specific possessors are cross-referenced on the head. But besides this, free pronominal possessors are "more incorporated" than non-pronominal possessor phrases, as is evidenced by the fact that unlike the latter, they are not case-marked and should be placed immediately before their heads. Cf. the minimal pair (15), where the first example shows the construction with a pronominal possessor and the second exhibits the construction with a non-pronominal specific possessor:

(15)   Adyghe
     a.   *a-ŝ'ə-ʁe*   *se*   *s-jə-wəne-r*
          3PL-make-PST   I   1SG-POSS-house-ABS
          «the house of mine that they built»

     b.   *a*   *c'əfə-m*   *a-ŝ'ə-ʁe*   *jə-wəne-r*
          that   man-OBL   3PL-make-PST   POSS-house-ABS
          «the house of that man that they built»

Non-specific possessors also tend to be incorporated, so it is not surprising that their combinations with their heads are not infrequently described as compounds. In Adyghe, non-specific possessors normally form a single phonological word with the head and can be preceded by cross-referencing possessor prefixes, hence it is natural to consider them incorporated:

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[15] Incorporation is also favoured in the case of inalienable possession (see Nichols (1988); Creissels (2006, 155)), but this lies outside of the scope of this paper.
[16] Nichols also cites a few exceptions to this, most of which represent Turkic languages. In this family, non-pronominal possessors are typically cross-referenced, but pronominal possessors are often expressed by genitive phrases only. Note, however, that for example, in Old Turkic cases of non-cross-referenced possessors are relatively rare (Erdal (2004, 382-383)).

(16)   Adyghe
        t-jə-adəɣe-šxənə-gʷe-xe-r
        1PL-POSS-Adyghe-food-many-PL-ABS
        «our various Adyghe dishes»

Note that specific (either definite or indefinite) non-pronominal possessors (which occupy the center of the Modifier Scale) in Adyghe should be introduced by means other than incorporation. Similarly, in Tondano (Austronesian), pronominal possessors are expressed with suffixes (17a) and non-specific possessors such as *səraʔ* 'fish' in (17a) and *sapi* 'ox' (in 17b) are unmarked and adjoin to possessa. Both kinds of possessors therefore exhibit incorporation features. But other possessors can be separated from their heads by lexical material, and some of them (namely animate) are even introduced by analytic possessive determiners (17b).

(17)   Tondano (Sneddon (1975, 120))
    a.   *m-pasar-ea   səraʔ*
          N-market-3PL   fish
          «their fish market»

    b.   *roda   sapi   ni   papa*
          cart   ox   POSS:SG   father
          «father's ox cart»

Apparently, both in Adyghe and in Tondano, constructions with attributes occupying the center of the Modifier Scale show less or no features of incorporation, which highlights the similarities between incorporation and NP-internal agreement.

As concerns adjectival constructions, in those languages that incorporate (to some degree) non-specific possessors, adjectives often show the relevant features as well. Bhat (1994, 35ff.) speaks of adjectives as «being part of a unified entity» providing a number of aspects where they are formally or functionally deficient and notes that a few descriptions attempt to determine the adjective-noun combinations as compounds. In this light, the principle (H2) turns out to manifest (H4), for the absence of marking is also a feature of incorporation.

In sum, NP-internal incorporation tends to affect the same attributes as concord: just like concord, it is preferred for the ends of the Modifier Scale. Since incorporation most likely reflects a high degree of bondedness, the same can be hypothesized for NP-internal agreement. This could seem surprising: by itself, concord does not look as something manifesting tightness with the head. The next section will show how this problem can be resolved.

5. Concord as incorporation

The similarities that are found between concord and NP-internal incorporation can get a simple explanation. In fact, NP-internal agreement can be represented as (originating from) incorporation of the lexical material describing a modifier into the grammatical material describing the whole complex phrase[17], which I will call *inflection-based incorporation* contrasting with *lexical-based incorporation* described above. This proposal is similar to the one found in Lehmann (1988, 59-60) and Aristar (1991) and (1995), where it was suggested that concord could originate from a construction containing a *modifier-pronoun complex* (where the modifier presumably was to some extent incorporated – in our sense) which was apposed to the *head nominal* and marked for the same categories as the latter. Note, however, that at least as far as agreeing adjectives are concerned, the postulation of the existence of a pronominal element (at some stage) is probably unnecessary : in languages lacking any clear-cut distinction between adjectives and nouns, concord inflection need not be different in status from the expressions of the same categories on notional heads[18].

Now, not only can the *incorporation theory* of NP-internal agreement explain the similarities between concord and lexical-based incorporation, but it also sheds light to certain interesting facts about agreeing constructions.

Firstly, as Slavic *possessive adjectives* in (13)-(14) and the Andic constructions (6b), (7b), (8b) and (9b) demonstrate, if a modifier contains two *dependency markers*, one of which is that of agreement and the other is not, the agreeing morpheme should be *less embedded* in the morphological structure than the corresponding non-agreeing morpheme. This is not trivial, since such markers can be considered to fulfill the same function, so the opposite order might be as possible as what we observe. However, if we regard concord a kind of incorporation into the agreement marker, the *external* position of the latter becomes natural, for it cannot be embedded into an item it incorporates.

Secondly, the appearance of agreement on analytic possessive markers quite often extends the range of uses of the agreeing pattern. For example, in many Bantu and Indic languages, an agreement morpheme appears on an analytic possessive marker, and this construction covers all kinds of possessors. This can

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[17] This does not work for agreement expressed by such means as tone or reduplication, but arguably, this kind of concord is different from the one discussed here. Note that such agreement seemingly is not found in possessives.

[18] In this respect, a natural question can be posed of whether the inflection of the notional head has a different status from the concord inflection of modifiers. Ideally, the answer should be negative. Indeed, nominal inflection usually originates from analytic markers with head properties, and normally these properties are retained in the course of grammaticalization (Haspelmath (1992)). Tight complexes constituted by a stem plus inflection can therefore be seen as a result of incorporation of the former into the latter.

be interpreted as a consequence of the fact that the absence of incorporation of the lexical expression of the possessor favors a wider range of such expressions[19].

Thirdly, if concord is a process analogous to lexical-based incorporation, it is expectable that the agreeing form will have the distribution determined by an element into which the modifier incorporates. Since the agreement inflection, I claim, represents the whole nominal, an agreeing form should have the distributional possibilities of this nominal[20]. These expectations are born out. For adjectives, for example, Croft (1991, 74) notes (with reference to Joseph Greenberg) that «[i]n fact, it appears that there do not exist languages with nominal inflectional morphology distinct from adjectival inflectional morphology in which the adjective(s) in a "headless" noun phrase takes the nominal inflection». This evidences that the adjectival concord morphology can fulfill the same functions as nominal inflections (although paradoxically, Croft makes quite the opposite conclusion)[21]. The same is usually true for possessives. For example, (18) illustrates that in Yimas, agreeing forms can easily serve as absolute possessives, i.e. possessives without a lexically expressed possessum (but note that in some languages, non-agreeing possessors can do so as well)[22]. (19) demonstrates that within NPs too, agreeing constituents can get more syntactic freedom, especially as their position is concerned. I suspect that the reason of this is that they can have the same distribution as their heads.

(18)   Yimas (Foley (1991, 182))
       ama-na-kn   *wayk-k*   *wa-n*
       I-POSS-V:SG   buy-IRR   go-IMP
       «Go buy my (betelnut)»

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[19] Such concord can be reminiscent of the *adposition incorporation* observed in some polysynthetic languages (e.g. in Abkhaz).

[20] More precisely, if we assume the layered (or partly layered) morphological and syntactic structure, concord morphology represents a layer restricted by agreement features. For example, if a language has cases, but agreement features include only gender and number, then the agreeing form should take case endings in order to serve as a full-fledged NP.

[21] See Gil (1994), (2005) and Creissels (2006, 67-71) on the typology of head omission in attributive constructions. Both authors underline the peculiar role of concord inflection in the mechanisms of such *discourse reduction* (to use the translation of Creissels's term *réduction discursive*). In fact, Gil (2005) also claims the existence of counterexamples to the hypothesis that agreement necessarily allows adjectives to appear in *headless constructions* without nominalization. The two examples he cites (Kayardild and Hunzib) are not uncontroversial, though. In Kayardild (Australian / non-Pama-Nyungan) adjectives can occur without nouns, albeit in highly marked contexts (Evans (1995, 234)), and for Hunzib (Northeast Caucasian) Bokarev (1967, 479) provides examples of *substantivited adjectives* that do not differ from the forms used in attributive constructions in any relevant way.

[22] Curiously, absolute possessives in general follow the same tendencies in the choice of possessors as lexical-based incorporation and concord. Thus, lexicalization of absolute possessives is normally found for the most definite nouns (such as proper nouns) and non-specific possessors. Moreover, it is exactly these classes that most easily serve as basis for absolute possessives and / or acquire the simplest marking in this case.

(19)   Yimas (Foley (1991, 181))
    a. *patn*   *ama-na-kn*   *mpa-n*
        betelnut[v:sg]   I-poss-v:sg   one-v:sg
    b. *mpa-n*   *patn*   *ama-na-kn*
    c. *mpa-n*   *ama-na-kn*   *patn*
    d. *patn*   *mpa-n*   *ama-na-kn*
    e. *ama-na-kn*   *patn*   *mpa-n*
        «my one betelnut»

Fourthly, the *incorporation theory* of NP-internal agreement explains some violations of the principles governing the preferences for concord and lexical-based incorporation that are suggested in (H3) and (H4). These principles are related to the same parts of the Modifier Scale, so they naturally compete with each other in languages where both NP-internal lexical-based incorporation and concord are used. But if these phenomena represent just different manifestations of the same process, this competition is understandable, since functionally concord and lexical-based incorporation are equivalent.

It is presumably for this reason that we find the omission of concord suffixes in Akhvakh and Godoberi, which makes dependents unmarked and hence displaying incorporation features. Another illustration of the same competition is provided by Hebrew, where adjectives show agreement in definiteness, gender and number, while definite and non-specific possessors can be introduced within the incorporating *construct state* construction, which involves obligatory juxtaposition of the head and the dependent and is even accompanied by certain morphonological changes (cf. Borer's (1999) analysis of constructs as a result of incorporation). Both patterns are exemplified in (20). Here the adjectival attribute *ləvan-* 'white' takes a gender suffix, and the non-specific possessor *erev* 'evening' attaches directly to the head causing phonological changes in the final part of this noun (the basic form of the feminine gender suffix presented in this example is –*a*, but it converts into -*at* due to the presence of the following noun):

(20)   Hebrew
        siml-at   *erev*   *ləvan-a*
        robe-f:cs   evening   white-f
        «a white evening dress»

Apparently, the incorporation pattern could not spread from adjectives to non-specific nominal modifiers in this language. But if we assume that concord and lexical-based incorporation are the same phenomenon, there is nothing strange about the fact that they are found for similar attributes. Note, by the way, that specific indefinite possessors, which occupy the middle of the Modifier Scale, in Hebrew can only be introduced with an analytic non-agreeing construction.

Thus, an analysis where concord is understood as inflection-based incorporation gives a key to various features of languages that possess NP-internal agreement.

Still, this approach should not be overdone, because there are pieces of evidence that concord can turn into simple marking of syntactic dependency :

(i) Agreeing modifiers occasionally can be incorporated themselves. This is observed in Spanish and French, where singular pronominal possessors, which show agreement, are normally expressed with bound clitics. Diachronically, cliticization is, of course, a secondary phenomenon. But it is interesting that in both languages it resulted in departure from the tendencies outlined above. First, cliticized possessor pronouns cannot function as absolute possessives. In French the absolute possessive function is now fulfilled by stressed forms like *mien* 'mine', *tien* 'thine', *sien* 'his' etc., which formerly could appear as adnominal modifiers as well. In Spanish, stressed forms still can function both adnominally and as absolute possessives, but cliticized forms do not agree in gender anymore. This caused a situation where the default singular pronominal possessors agree only in number, while plural pronominal possessors agree both in number and gender, contrary to the hypothesis suggested at the end of Section 3[23].

(ii) In some languages, the order of an agreeing modifier and the notional head was syntacticized, resulting in that the distribution of an agreeing modifier is not identical to that of the head nominal, which partly undermines the treatment of concord as incorporation. Examples of such languages seemingly include, for instance, most Bantu languages and possibly Hindi, where modifiers in non-canonical positions arguably represent a kind of afterthought, except in poetry (Vladimir Liperovskij, pers. com.). Evans (1995) reports that in Kayardild, adjectives (which agree in case) have a fixed position within NPs, while the place of possessor phrases depends on whether they *anchor* the possessum enough to make it definite. In all of these languages, concord is used almost for all kinds of modifiers discussed in this paper, but Andic languages, which probably belong to the same type and seemingly do not allow much word order variation in NPs, perhaps lessen the value of this correlation. It is worth saying that in many (perhaps most) languages, attributes have unmarked positions, but the degree to which other possible positions of theirs are marked can vary.

(iii) Some languages allow for mismatches between certain characteristics of a nominal and its head, and in these languages the agreement values of modifiers occasionally can be determined by the head. Thus, in the following Russian example the verb displays feminine agreement with a phrase whose head is grammaticaly masculine and can trigger masculine agreement on modifiers :

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[23] See Antrim (2003) for discussion of relations between the clitic status of the relevant possessive pronouns in Spanish and French and their functional deficiency.

(21)   Russian
       Naš / Naš-a   *učitel'*   *ne*   *priš-l-a*
       our(NOM:SG:M) / our-NOM:SG:F   teacher[M](NOM:SG)   not   come-PST-3SG:F
       «Our teacher has not come»

Since the form of the modifier in (21) depends on the head, such concord cannot be interpreted as a result of incorporation into any expression representing the whole NP and is likely to be a matter of dependency marking. However, as (21) illustrates, at least in Russian, semantically-based concord is possible here as well. Moreover, it turns out that placing the modifier in the non-canonical postnominal position decreases the possibility of purely formal concord : the sentence *?Učitel' naš ne prišla* appears to be significantly less felicitous despite the fact that postnominal possessive pronouns do occur in Russian. Thus, the traces of the original functioning of agreement are found even here.

    To conclude, agreement indeed can be grammaticalized as marking of dependency. Still, this is typically a secondary phenomenon, and it is more likely that not only its main function, i.e. reflecting of a certain degree of bondedness (which can, of course, vary from one language to another), but also some of its implications can be retained in this case.

6. Conclusion

    In this paper I have proposed the existence of correlations between the type of an adnominal modifier and the use of NP-internal incorporation and concord. In particular, it has been argued that the probability of the appearance of these marking means increases according to the closeness of a modifier to either end of the Modifier Scale, which was introduced in Section 2 and related to the topicality of attributes. The similarities between NP-internal agreement and incorporation have been attributed to the fact that the former can synchronically or could diachronically result from incorporation of a modifier into grammatical material reflecting semantic characteristics of the whole nominal. This, in turn, explains a number of properties of agreeing attributes in various languages.

    In fact, the only strict generalization that can be implied from this is the following :

(H5)   No constructions showing NP-internal lexical-based incorporation or concord can occur such that the constructions used for modifiers to the left and to the right of the Modifier Scale do not display either lexical-based incorporation or concord.

    But even this generalization perhaps is too strong. One thing is that the term *incorporation* is used here rather broadly (see Section 4). Another is that (H5) may be not exceptionless. In particular, there is one system that is close to its violation. In the Cushitic language Beja (Bedauye), first person absolute possessives (both singular and plural), which can also be used in attributive

constructions, are not marked for gender and number of the possessum, all other pronominal absolute possessives are marked for these categories, and non-pronominal possessors do not show concord (Tucker & Bryan (1966)). Consequently, the agreeing pronominal possessors turn out to be *isolated* in the Modifier Scale: both arguably more topical (1st person) and less topical (non-pronominal) possessors do not display concord. Still, in addition, all pronominal possessors in Beja can be expressed by cross-reference suffixes on the possessum and hence show lexical-based incorporation, which saves the principle suggested in (H5). Nonetheless, the Beja system cannot be considered typical and presumably is a result of complex diachronic processes.

Indeed, the arguments proposed here suggest mainly what the original system involving concord and / or NP-internal incorporation could be. A further task concerning the development of NP-internal agreement systems could be to explore the order of changes that they undergo, since seemingly some of these changes become possible only when some others have already occur.

Another open question respects many components of NPs which were not discussed here. However, an investigation of these types would require taking into account a number of additional factors. Importantly, the function of determiners and determiner-like elements such as demonstratives and numerals is rather different from that of adjectives and possessor phrases (cf. Creissels (2006: 71ff.)), and *agreement* found in relative clauses is arguably distinct from concord. That is why generalizations concerning these components of NPs need not fit into the picture based on the Modifier Scale.

But the main of the remaining questions is why it is the ends of the Modifier Scale that are most inclined to concord and / or NP-internal incorporation. I am not going to give a definite answer here, although some speculations can be provided. Note that in some formal semantic theories (e.g., Van Geenhoven (1998)) both (some) definite and non-specific nominals refer to constants (either of the individual or of the predicate type). This would force them to attach to some other material to make well-formed expressions, hence their high degree of bondedness. Almost the same can be given informally as constraints on those types of expressions that do not bear information which is sufficient enough for them to participate in an utterance more or less autonomously. Note, however, that the range of the attributes that are more inclined to agree is not precise and can vary in different languages[24]. Presumably, the agreement pattern once found in a language can spread to contexts that are less natural for it, or alternatively, it can be replaced by other constructions. The crucial point, however, is that all such changes should follow the Modifier Scale.

The final issue to be touched upon here concerns the concept of bondedness, which apparently requires additional clarification. The central question related

24 Another problem for this explanation is posed by some Salish languages, where a non-incorporating and non-agreeing possessive is found only with proper nouns (Kroeber (1999, 73-74)), which clearly refer to constants.

to this is whether bondedness is epiphenomenal to grammars or not. As should be clear from the preceding discussion, I believe that the choice should be made in favour of the option that bases bondedness on the functional properties of dependents. This suggests, however, that not only the concept of bondedness should have universal validity but also its manifestations. Indeed, are there languages that lack NP-internal lexical-based incorporation (as it is defined in Section 4)? I suspect that if such languages exist, they should display the phenomenon of concord.

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