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Action nominal constructions in the languages of Europe

1. Introduction

1.1. The subject

This chapter is about one particular type of nouns, action nominals, and about one particular aspect of their syntactic behaviour, namely, how action nominals combine with their arguments and how the relations between them are expressed. In a sense this is a follow-up on an earlier cross-linguistic study of action nominal constructions (Koptjevskaja-Tamm 1993), but the focus here is on Europe. The main questions are: First, what syntactic types of action nominal constructions are represented in the languages of Europe (Sections 2-4)? Second, how do European languages compare to other languages in this respect (Section 6)?

Following Comrie (1976: 178), ACTION NOMINALS are defined as “nouns derived from verbs (verbal nouns) with the general meaning of an action or a process”, capable of inflecting or taking prepositions or postpositions in the same way as non-derived nouns, and showing reasonable productivity.¹ An ACTION NOMINAL CONSTRUCTION (ANC), then, is a construction which has an action nominal as its head and contains reference to the participants in the action or process designated by that action nominal. Thus, *Peter's reading of the book*, *čtenie knigi Petej*, *Peters Lesen des Buches* are all examples of action nominal constructions. *Peter* and *the book* can, at least informally, be called the arguments of the action nominal *reading*, its subject and object respectively. The class of action nominals defined in this way corresponds roughly to Grimshaw's (1990) “complex event nouns”.

The exact range of meanings and functions typical for action nominals across languages can vary considerably, but in the most frequent cases ANCs refer to propositions, facts and/or events. This semantic classification was primarily suggested by Vendler (1967, 1970), but has since then been a favourite topic in formal semantics (cf. Zucchi 1993 and Hamm 1999, to mention only two recent publications). Thus, when ANCs serve as complements to such verbs as *to assert* and *to believe*, they refer to propositions; the verbs *to know* and *to regret* take factive complements, while the verbs *to hear* and *to continue* take complements referring to events.

According to the definition, action nominals are nouns, and action nominal constructions are, at least in some sense, noun phrases. And in fact, the English ANC

Peter's reading of the book looks like the ordinary NP *Peter's map of the country* in that (i) both mark their dependents in the same way and put them in the same linear order with respect to the head, and (ii) neither uses head-marking. Therefore, a chapter on action nominal constructions finds a legitimate place in a volume devoted to nouns and noun phrases. However, it does differ from other contributions in dwelling on the borderland between nominal and verbal/clausal constructions.

Whereas typical nouns refer to things, persons, places, and other more or less concrete objects and, prototypically, introduce participants and "props" and deploy them (Hopper & Thompson 1984: 708), action nominals make reference to events (either directly or as a part of a larger proposition/fact). Referring to events is what verbs normally do, but whereas verbs "assert the occurrence of an event of the discourse" (ibid.), action nominals give it a name. Thus, in their semantics and discourse behaviour, they combine verbal and nominal features and occupy an intermediate position between typical nouns and typical verbs (Croft 1991: Chapters 2 and 3). Also, action nominals take arguments more or less like the corresponding (finite) verbs do. Nouns normally do not take arguments, even though this might be doubtful for relational nouns, such as kinship terms or words for body-parts.²

This ambivalence of action nominals also manifests itself in the structure of ANC's across languages: in some languages ANC's look more or less like other NPs, while in others they show clear similarities with finite clauses. Precisely this structural variation will be the main object of this chapter, in which the means of signalling the relations of an action nominal and its dependents will be compared to those signalling the relationships in corresponding finite clauses and in ordinary NPs.

Comparing the internal structure of ANC's with that of NPs and finite clauses has been a hot issue in the last three decades, and the literature is too vast even to be listed here. It has been demonstrated that in many languages the internal syntax of ANC's depends on the exact thematic roles of the dependents (e.g., Hoekstra 1986). However, there always seem to exist standard patterns which the majority of intransitive and transitive action nominals in a language follow. This majority includes action nominals derived from highly transitive verbs. In this chapter I will be interested in such standard patterns and will use the abbreviations S (the single argument of an intransitive verb and of an intransitive action nominal), A, and P (the agent and patient respectively of highly transitive, prototypical verbs and of action nominals derived from them).

There is also a long tradition in distinguishing between derived verbal nouns (like *conquest*, *refusal*, and *arrival*) and inflectional verb forms, like English gerunds (Chomsky 1970). However, as Comrie (1976) and Koptjevskaja-Tamm (1993: 263–266) show, action nominals in many languages pose serious problems for a neat classification into derived and inflected forms in that the various criteria suggested for inflection and derivation clash when applied to such words. While there is a certain degree of correlation between at least some of these criteria applied to an action

nominal and its possible syntactic type, on the whole the same typology holds for the entire class of ANCs, independently of the exact categorial status of their head.

Within this volume, this chapter relies on the cross-linguistic characterization of possessive NPs in the preceding chapter. Some of the data and problems are similar to those discussed in Borsley, Kornfilt, & Vamling (in press).

1.2. The sample

Since this chapter aims at providing a European picture of ANCs, I have tried to collect data on as many European languages as proved feasible. With 60 languages, the coverage is reasonably good, although there are a few unfortunate gaps including some of the Finno-Ugric and Altaic languages on the eastern periphery, Kalmyk, most of the Northwest Caucasian languages (except Abkhaz), and most of the Iranian languages (except Kirmandji).

The present sample, listed in the Appendix, differs in a principled way from the 70 language sample representing all the world's linguistic macroareas used in Koptjevskaja-Tamm (1993) and including only 27 European languages. That earlier sample was a typological rather than a genetic or areal one, since its primary aim was to cover all types of ANCs, rather than to be representative of all genetic and areal groupings. Consequently, that sample contained a few examples of closely related languages differing, however, with respect to "interesting" properties – such as their nominalization patterns, basic word order in clauses and in NPs, or dependent-marking and head-marking.

2. The typology of action nominal constructions

Cross-linguistically ANCs can be classified as sentence-like or as NP-like, depending on the degree to which the relations between an action nominal and its arguments are signalled by the same means also employed in finite clauses or in NPs. Logically there could be four major types of ANCs: the relations between an action nominal and its arguments could be signalled (i) entirely by sentential syntactic means; (ii) entirely by nominal syntactic means; (iii) by a mixture of sentential and nominal syntactic means; (iv) by special means, used in neither finite clauses nor in NPs.

This last logical possibility turns out not to be realized across languages, suggesting this universal:

ANC UNIVERSAL 1: ANC A PARASITE

No language has syntactic means (dependent-marking, head-marking, word order) which are exclusively used in ANCs.

In a sense, ANCs do not exist as autonomous, independent constructions, but always “borrow” syntactic means from finite clauses and/or NPs. Thus, the relations between the head of an ANC and each of its dependents S, A, and P are signalled by dependent-marking, head-marking, and/or word order as also used either in finite clauses or in ordinary NPs. The latter usually means that the relation between the action nominal and (some of) its dependents is signalled in the same ways as that *between a possessee and a possessor in possessive NPs*. Using dynamic imagery, I will say that dependents *retain sentential marking* or *genitivize* (i.e., assimilate to the possessor). Since the structure of finite clauses and possessive NPs shows great cross-linguistic variation, “retention of sentential marking” and “genitivization” can imply quite different structures for different languages.

Although ANCs vary considerably across languages in their degree of similarity to finite clauses and possessive NPs, this variation is severely restricted in at least two respects. First, the three major syntactic means – word order, dependent-marking, head-marking – form a hierarchy of their nominal and sentential properties. Second, different arguments vary as to their proneness to retain sentential properties. The overall hierarchy of sentential vs. nominal means employed in ANCs will be presented in Section 5.2 (cf. in particular Figure 1).

The typology of ANCs is based on dependent-marking as a primary parameter, in a few cases supplemented by head-marking as an additional parameter (see Koptjevskaja-Tamm 1993: 58–60 for justification of this ranking).³ ANCs can be placed on a scale according to the extent of their sentence-likeness and NP-likeness. This scale consists of discrete points, corresponding to well defined *types* of ANCs, which will be examined in Sections 3 and 4.

3. Major types

3.1. Type 1: Sentential

The Sentential type (SENT) is characterized by the retention of sentential dependent-marking in ANCs.

Godoberi (Daghestanian) and Basque exemplify this type (Kazenin 1994, Saltarelli 1988). Examples (1a) and (1b) from Godoberi show intransitive and (di-)transitive finite SOV clauses, where the major syntactic functions are dependent-marked according to the absolutive-ergative pattern: S and P (the absolutes) are in the nominative, A is in the ergative, and the recipient is in the dative case. Exactly the same dependent-marking patterns are seen in examples (2a) and (2b), which involve intransitive and transitive ANCs respectively. Example (3) is an ordinary (possessive) NP, in which the dependent is in the genitive. The corresponding structures in Basque are seen in (4)–(6).

- (1) a. ʕali w-aʕa
Ali:ABS M-come:AOR
'Ali came'
b. aHmadi-di maHamadi-li rec'i iḱi
Ahmad-ERG Muhammad-DAT bread:ABS give:AOR
'Ahmad gave bread to Muhammad'
- (2) a. ʕali w-aʕ-ir
Ali:ABS M-come-AN
'Ali's coming'
b. aHmadi-di maHamadi-li rec'i iḱir
Ahmad-ERG Muhammad-DAT bread:ABS give-AN
'Ahmad's giving bread to Muhammad' (Kazenin 1994: 51)
- (3) ima-Li hanq'u
father-GEN house:ABS
'father's house' (Fedorova & Sidorenko 1994: 115)
- (4) aita-k ama-ri gona gorri-a eros-i
father-(SG)ERG mother-(SG)DAT skirt red-(SG)ABS buy-PERF
d-io
3A(-PRS.AUX2)-3SG.DAT(-3SG.ERG)
'Father bought a red skirt for mother' (Saltarelli 1988: 149)
- (5) a. Mikel gaizto-a iza-te-a
Mikel:ABS bad-ABS.SG be-AN-ABS.SG
'Mikel's being bad'
b. Mikel-ek ama-ri diru-a ema-te-a
Mikel-(SG)ERG mother-(SG)DAT money-(ABS.SG) give-AN-(SG)ABS
'Mikel's giving the money to mother' (ibid.: 155)
- (6) ama-ren diru-a
mother-(SG)GEN money-(SG)ABS
'mother's money' (ibid.: 161)

These ANC's share their dependent-marking with finite clauses and are clearly distinct from possessive NPs.

Let us now examine head-marking in these examples. In Godoberi, many verbs agree with the absolutive in class (gender) and number, as in (1a), and the corresponding action nominals retain this class agreement, as in (2b). In Basque, finite verbs obligatorily agree with the person and number of S, A, P, and datives, as in (4). The corresponding ANC lacks any head-marking and in this respect behaves like NPs.

Thus, SENT ANC's vary as to whether they retain or lose sentential head-marking. Nevertheless, my earlier world-wide survey suggests this generalization:

ANC UNIVERSAL 2: THE HEAD-MARKING AVERSION OF A
ANCs never retain sentential head-marking for the A.

In fact, sentential head-marking for the S of ANCs is retained only in a few Daghestanian languages. A possible explanation for this restriction is the gender/class character of this agreement, as opposed to personal agreement in most of the other SENT languages. Thus, class agreement seems to be retained more easily than personal agreement. This is confirmed by Tabasaran (Kondik dialect), in which verbs agree in class with their absolutes and in person with semantically and communicatively salient NPs. While ANCs retain class agreement with the S and P, personal agreement exists only in finite clauses (Kibrik 1985, Bogatyrev & Boguslavskaja 1982).

In Europe, SENT ANCs occur in Basque and in the Nakh-Daghestanian languages. While most of the Nakh-Daghestanian languages have SENT as their only nominalization pattern, Agul alternates between SENT and POSS-ACC (see (37) in Section 4.5). The so called "substantivized infinitives", i.e., infinitives preceded by articles or comparable determiners in some Romance languages (in my sample in Italian and Spanish), which count as action nominals according to the criteria in 1.1, also show the SENT pattern, sometimes alternating with POSS-ACC.⁴ Outside Europe, SENT ANCs are attested, for example, in Burushaski, Korean, Tamil (and other Dravidian languages), Quechua, and Kobon.

3.2. Type 2: Possessive-Accusative

In ANCs of the Possessive-Accusative type (POSS-ACC), S and A genitivize, while P retains sentential dependent-marking.

This type can be illustrated from Armenian. The structure of finite clauses is seen in (7), where both subject and inanimate direct object are in the nominative, the non-marked form (animate objects are in a different case), and the verb agrees with its subject in person and number. Word order in finite clauses is fairly free, with SVO as the most frequent option. In the corresponding ANCs in (8), P retains its sentential (non-marked) form, while both S and A are put in the genitive/dative case and the action nominal itself attaches the definite suffixed article. The relation between S/A and the action nominal is, thus, expressed in the same way as the relation between the possessor and the possessee in a non-derived NP (9).

- (7) a. Seda-n par-um e
 Seda-NOM dance-PART.IMPRF be:PRS.3SG
 'Seda is dancing'
- b. Seda-n kard-um e girk'
 Seda:NOM read-PART.IMPRF be:PRS.3SG book:NOM
 'Seda is reading a book'

- (8) a. Seda-ji par-el-ə
 Seda-GEN dance-AN-DEF
 'Seda's dancing'
 b. Seda-ji girk' kard-al-ə
 Seda-GEN book:NOM read-AN-DEF
 'Seda's reading of a book'
- (9) Seda-ji girk'-ə
 Seda-GEN book-DEF
 'Seda's book'

In Turkish, possessive NPs are double-marked: the possessor takes the genitive case and the possessee attaches the corresponding possessive suffix. Examples (10a–c) illustrate the POSS-ACC type for Turkish: both the dependent-marking of the S and A in ANCs and the head-marking of the action nominal follow the pattern of possessive NPs.

- (10) a. (biz) viski-yi iç-eceğ-iz
 we whisky-ACC drink-FUT-1PL
 'We will drink the whisky' (George & Kornfilt 1981: 107)
 b. Ahmet [biz-im viski-yi iç-tiğ-imiz-i] bil-iyor
 Ahmet we-GEN whisky-ACC drink-AN-1PL.POSS-ACC know-PRS
 'Ahmet knows that we drank the whisky' (ibid.: 117)
 c. biz-im viski-miz
 we-GEN whisky-1PL.POSS
 'our whisky'

In Europe, POSS-ACC ANCs occur in Nenets (Samoyedic), Turkish (and probably all Turkic languages), in the Daghestanian language Agul as an alternative to SENT, in Armenian, in English, and with substantivized infinitives in Italian (alternating with SENT), restricted to pronominal As. Outside Europe, POSS-ACC is very common and is found, for example, in Amele (Papuan), among the Semitic languages (Amharic, Classical Arabic, Modern Egyptian Arabic, Modern Israeli Hebrew), among the Bantu languages, among the Polynesian languages, in Wikchamni (Penutian), in Modern Mongolian, Yukaghir, and in Thai.

3.3. Type 3: Ergative-Possessive

The Ergative-Possessive type (ERG-POSS) is characterized by genitivization of the Ps and the Ss in ANCs, which receive identical marking as opposed to the As.

Russian exemplifies this type. In finite clauses, the subject is in the nominative and the direct object is normally in the accusative. The verb agrees with the subject

in number and person or gender. Word order is relatively free, SVO being the most neutral variant. In ordinary NPs, possessors in the genitive case follow the head.

- (11) Napoleon zavoeva-l Moskv-u
 Napoleon:NOM.SG conquer-PST:M.SG Moscow-ACC.SG
 'Napoleon took Moscow'
- (12) armij-a Napoleon-a
 army-NOM.SG Napoleon-GEN.SG
 'Napoleon's army'

In ANC's with only one argument this takes the genitive case. Where both an A and a P are present, it is the P that takes genitive, while the A is in the instrumental case. Action nominals precede their arguments.

- (13) a. zavoeva-nie Moskv-y Napoleon-om
 conquer-AN:NOM.SG Moscow-GEN.SG Napoleon-INST.SG
 'Napoleon's conquest of Moscow'
- b. zavoeva-nie Napoleon-a
 conquer-AN:NOM.SG Napoleon-GEN.SG
 'Napoleon's conquest'
- c. priezd Napoleon-a
 come:AN:NOM.SG Napoleon-GEN.SG
 'Napoleon's arrival'

Note that dependents in the instrumental are normally excluded from ordinary NPs. On the other hand, the instrumental case marks agents in passive clauses:

- (14) Moskv-a byl-a zavoeva-n-a Napoleon-om
 Moscow-NOM.SG was-F.SG conquer-PASS.PART-F.SG Napoleon-INST
 'Moscow was conquered by Napoleon'

A large portion of the ERG-POSS languages in the sample use the same marker for the A in ANC's and for agents in passive clauses. In Europe this is true for Georgian and Megrelian, Albanian, the Slavic languages, English and Dutch, Modern Greek, Kirmanji, the Romance languages Catalan, French, Rumantsch, Rumanian and Spanish, Old Irish, Irish and Scottish Gaelic (marginally, "bookish"), Hungarian and Estonian (on Lithuanian see Section 3.4). This suggests a possible connection between nominalization according to the ERG-POSS pattern and passivization. However, it has been argued for at least some of these languages (for example, for Russian, Georgian, and Estonian in Koptjevskaja-Tamm 1993: 147–155, for Russian and Dutch in Schoorlemmer 1995: 303–306) that there are significant differences in the output of the two processes which are inconsistent with a possible derivation of ERG-POSS ANC's from passives.

A few languages use different markers for the As in ERG-POSS ANCs and agents in passive clauses. Comrie & Thompson (1985: 385–387) mention *da parte di* in Italian, *durch* in German, and *o* in Welsh, as contrasted to the agent markers *da*, *von*,⁵ and *gan* respectively.

Finally, Abkhaz, which also resorts to ERG-POSS ANCs, lacks a personal passive and marks the A in ANCs by the instrumental postposition. Abkhaz is also interesting insofar as it is typically head-marking and finite verbs agree with their S, P, A, and indirect objects, whereas action nominals are head-marked only for their S and P by means of possessive prefixes:⁶

- (15) a. à -jʏab-c^oa (Ø-)jso-yt'
the-girl-PL they(SET1)-swim-FIN
'The girls swim' (Hewitt 1979: 104)
- b. (sarà barà) bə-z-bó-jt'
I you you(SET1)-I(SET3)-see-DYN.FIN
'I see you'
- c. à -jgab-c^oa rə-y^onə
the-girl-PL their(SET2)-house
'the house of the girls' (ibid.: 116)
- (16) a. larà l-ca-rà
she her(SET2)-go-AN
'her going' (ibid.: 112)
- b. sarà sà-la bə-ba-rà
I me-by your(SET2)-see-AN
'my seeing you' (lit. 'your seeing by me'; ibid.: 112)

Thus, the ERG-POSS type in general is not directly correlated with passivization, and the same is true for non-European languages with this nominalization pattern, such as the Polynesian languages Maori, Pukapukan, Samoan, and Tongan, Modern Israeli Hebrew and Ancient Egyptian, and Hixkaryana (Carib) (see further Koptjevskaja-Tamm 1993: 140–158).

3.4. Type 4: Nominal

The Nominal type (NOMN) is characterized by the genitivization of both S and A and by the assimilation of P to some dependents in non-derived NPs. This type exists in two varieties, Double-Possessive and Possessive-Adnominal.

3.4.1. Double-Possessive

The Double-Possessive type (DBL-POSS) is characterized by the genitivization of S, P, and A in ANCs.

Estonian has ANCs of this subtype. Examples (17a–c) illustrate the three usual patterns for transitive finite clauses. More specifically, word order is SVO, the subject is in the nominative, the finite verb agrees with the subject in person and number, while the direct object can choose between partitive, genitive, and nominative depending on semantic and syntactic conditions.

- (17) a. Võta raamat!
 take:IMP book:NOM.SG
 'Take the book!'
- b. Ma võt-si-n raamat-u / raamat-ud
 I:NOM take-PST-1SG book-GEN.SG / book-NOM.PL
 'I took the book / the books'
- c. Ma loe-n raamat-ut
 I:NOM read-(PRS)1SG book-PARTIT.SG
 'I am reading the book'

In non-derived NPs (18a), the dependent is in the genitive and precedes the head. In ANCs with so-called *minen*-nouns as a head (19), S, P, and A precede the head and are in the genitive. When both A and P are present, A precedes P. Since it is very common in Estonian for nouns to have several genitive dependents (18a–b), the whole ANC does not differ from normal NPs.

- (18) a. Jaan-i Inglisma-a kaart
 Jan-GEN.SG England-GEN.SG map:NOM.SG
 'Jan's map of England'
- b. Tallinn-a loomaaia Aafrika loom-ad
 Tallinn:GEN.SG zoo:GEN.SG Africa:GEN.SG animals-NOM.PL
 'the African animals at Tallinn's zoo'
- (19) Peetr-i maja-de ehita-mine
 Peter-GEN.SG house-GEN.PL build-AN.NOM.SG
 'Peter's building (of) houses'

Although examples like (19) are considered "clumsy", they occur fairly often in written texts.

The corresponding construction in Finnish, exemplified in (20a), occurs much less often and informants disagree on how acceptable they are. Finnish also permits (and frequently uses) the stacking of genitives with non-derived nouns (20b), making DBL-POSS ANCs look similar to NPs with non-derived heads.

- (20) a. [Vanhempien taloudellisen tuen antaminen] on
 parent-GEN.PL economic support-GEN.SG give-AN.SG.NOM is
 riippuvaista tuloista
 dependent income-PARTIT.PL
 'Parents' giving of economic support is dependent on their incomes'
 (Hakulinen & Karlsson 1979: 395, (198))
- b. nuo muutamat Liisa-n ruskeat mäyräkoiran pennut
 those few Liisa-GEN brown dachshund-GEN.SG puppy:NOM.PL
 'those few brown dachshund puppies of Liisa's' (Kristiina Jokinen p.c.)

In examples such as (20b), as suggested by Jokinen (1991), two kinds of attributes should be distinguished regardless of their identical genitival marking: genitives in determiner function, specifying the reference of the head, and genitives with a characterizing or descriptive function, following determiner genitives and/or adjectival attributes if co-present. A combination of a descriptive genitive with a head comes close to compound structures in other languages, and since the syntax of ANCs appears to mirror that of NPs with non-derived heads, Finnish demonstrates the vagueness of the distinction between DBL-POSS and POSS-INC considered in Section 4.3. The same might as well apply to some other DBL-POSS languages, e.g., Estonian and Latvian.

The two Baltic languages Lithuanian (21) and Latvian also mark S, A, and P in ANCs with the genitive case, ostensibly exemplifying the DBL-POSS type. They are also notorious for their NPs with many genitives.

- (21) a. Kolumb-o Amerik-os atradi-ma-s
 Columbus-GEN.SG America-GEN.SG discover-AN-NOM.SG
 'Columbus' discovery of America'

However, the genitive case in these languages has an extremely wide range of other uses and at least in Lithuanian is also used to mark agents in passive clauses, as in (22).

- (22) Amerik-a buvo atra-st-a Kolumb-o
 America-NOM.SG was discover-PASS.PERF.PARTIT Columbus-GEN.SG
 'America was discovered by Columbus'

Thus, ANCs with two genitives in Lithuanian can be classified as both DBL-POSS and ERG-POSS.

DBL-POSS also occurs in Maltese (23) and, if only as a substandard and/or a very rare pattern, in Bulgarian, Italian, and Georgian (24).⁷ Again, in all these languages nouns can have several genitive attributes in the same NP.

- (23) a. l'assedju ta' Malta ta-t-Torok
 DEF-siege of Malta of-DEF-Turk:PL
 'the siege of Malta by Turks'

- b. pinna ta-d-deheb ta' Pietru
pen of-DEF-gold of Peter
'Peter's golden pen'
- (24) a. giv-is tamaši pexburt-isa
Givi-GEN playing football-GEN
'Givi's playing (of) football' (Hewitt 1983: 260–262)
- b. peṭre-s pur-is dana
Peter-GEN steel-GEN.SG knife:NOM.SG
'Peter's steel knife'

Outside Europe, this type is attested in Japanese.

In the languages considered so far, DBL-POSS ANCs had identical marking for A and P. However, as mentioned in connection with Finnish, there might still be grounds for distinguishing the two “genitive” positions, even though they are filled with expressions having the same marking. And in fact, this has been suggested at least for some of the languages allowing stacked genitives in their NPs and DBL-POSS ANCs (e.g., on Latvian see Christen 2001, on Georgian see Boeder & Schroeder 2000). For others, like Lithuanian and Japanese, facts seem to point to the conclusion that multiple “genitives” do not appear in structurally different positions.

Now, a few languages do have two distinct possessor forms, or two distinct genitives, and in those languages A and P may genitivize in different ways. The example par excellence is English, with its Saxon and Norman genitives (*Peter's reading of the book*). Similar examples come from Irish (25) and Scottish Gaelic (26), with their synthetic genitives and possessive prepositions *ag/aig* ‘at’. In contrast to English, the prepositional phrase corresponds to the A and not to the P.

- (25) a. léamh an leabhair ag Peadar
read:AN.SG.NOM the:GEN.SG book:GEN.SG at Peter:NOM
'Peter's reading of the book'
- b. cathaoir Pheadair
chair:NOM.SG Peter:GEN
'Peter's chair'
- c. an chathaoir seo ag Peadar
the:NOM.SG.F chair:NOM.SG this at Peter:NOM
'this chair of Peter's'
- (26) a. buannachd na h-Éibheid aig Alastair
conquer:AN.NOM.SG the:F.GEN.SG Egypt:GEN at Alexander:NOM
'Alexander's conquest of Egypt'
- b. cathair Phàdraig
chair:NOM.SG Peter:GEN
'Peter's chair'

- c. a' chathair aig Pàdraig
 the:F.NOM.SG chair:NOM.SG at Peter:NOM
 'Peter's chair'

The English and Goidelic dual pattern seems fairly unusual cross-linguistically, but a parallel is found at least in Gbadi (Niger-Congo: Kwa: Kru), which, according to Koopman (1984: 107–108) has two prenominal genitival markers, *ni* and *na*, both of which are employed in DBL-ANCs.

Word order in DBL-POSS ANC obeys one general principle:

ANC UNIVERSAL 3: WORD ORDER IN DBL-POSS ANC

In DBL-POSS ANC, the P is closer to the action nominal than the A.

Thus, in languages with preposed genitives the order is A–P–AN (see (19)–(21)), and languages with postposed genitives show its mirror image, AN–P–A (see (23), (25a), and (26a)), iconically reflecting the greater conceptual closeness between a verbal noun (and ultimately a verb) and its object as compared to the subject. When one genitive is preposed and the other postposed, A will be the preposed one and P the postposed one (as in English and in Georgian, cf. ex. (24a)).

3.4.2. Possessive-Adnominal

In the Possessive-Adnominal type (POSS-ADN), S and A in ANC are genitivized, while P gets the same dependent-marking as some oblique NPs.

Swedish illustrates this type. In finite clauses, only pronouns distinguish between subject and object forms, otherwise the two functions are only distinguished by word order. In non-derived NPs, the possessor in the genitive precedes the possessee, while all other nominal dependents (prepositional phrases) follow it. In ANC, S and A normally appear as prenominal genitives, while P is marked with the preposition *av* and follows the head. Thus, word order within ANC is the same as in finite clauses, A–AN–P.

- (27) a. Nazi-tyskland införliva-de Gdańsk
 Nazi-Germany incorporate-PST Gdańsk
 'Nazi-Germany incorporated Gdańsk'
- b. flick-or-s / flick-or-na-s böck-er
 girl-PL-GEN / girl-PL-DEF-GEN book-PL
 '(the) books of girls / the girls' books'
- c. [Nazi-tyskland-s införliva-nde av Gdańsk] utlös-te Andra
 Nazi-Germany-GEN incorporate-AN of Gdańsk trigger-PST Second
 Världskriget
 World-War
 'The incorporation of Gdańsk by Nazi-Germany triggered the Second
 World War'

At first sight, (27c) seems quite similar to English ANCs of the DBL-POSS type. However, even if the Swedish *av* phrases look like English *of* genitives, they are not postnominal genitives in the same sense. While *of* phrases constitute by far the largest part of postnominal attributes in English and may replace prenominal *s*-genitives in the vast majority of cases, this is not so in Swedish. In Swedish, prenominal genitives may be replaced by different prepositional attributes depending on the semantic relation between head and dependents and on other lexical and syntactic factors (cf. for instance Pitkänen 1979). In most cases, *av* dependents cannot replace prenominal genitives (and the use of this preposition has decreased in Modern Swedish during the last centuries), and no other preposition can be considered the marker of unmarked adnominal adjuncts either.

Danish is similar to Swedish; Icelandic (28), Scottish Gaelic, and Irish use prepositions with the general meaning 'on' (*á*, *air*, *ar* respectively). In addition, Scottish Gaelic can use the preposition *de* 'of, from' (29).

- (28) a. dráp-ið veiðimannanna á birninum
 kill-AN.NOM.SG hunter:DEF.GEN.PL on bear:DEF.DAT.SG
 'the killing of the bear by the hunters'
- b. lifa á Norðurlöndum
 live in Scandinavia:DAT.SG
 'to live in Scandinavia'
- (29) a. leughadh Dhomhnaill air an leabhar
 read:AN.NOM.SG Donald:GEN.SG on the:DAT.SG book
- b. leughadh Dhomhnaill dhen leabhar
 read:AN.NOM.SG Donald:GEN.SG of:the book
 'Donald's reading of the book'
- c. Chunnaic mi air an tràigh e
 see:PST I on the:DAT.SG shore:NOM.SG he
 'I saw him on the shore' (Gillies 1993: 208)
- d. glaine de dh'fhion
 glass of wine:NOM.SG
 'a glass of wine'

Outside the North-Western periphery of Europe, the POSS-ADN ANC type occurs in Modern Egyptian Arabic.

Table 1 summarizes the characteristic features of the four major ANC types.

4. Minor and restricted types

In addition to the four major ANC types, there are three relatively infrequent types. The Mixed type is a hybrid between the Possessive-Accusative and Ergative-

Table 1. Major types of action nominal constructions

Type of ANC	A	S	P
1. Sentential (SENT)	Sent	Sent	Sent
2. Possessive-Accusative (POSS-ACC)	Poss	Poss	Sent
3. Ergative-Possessive (ERG-POSS)	Obl	Poss	Poss
4. Nominal (NOMN)			
a. Double-Possessive (DBL-POSS)	Poss ₍₁₎	Poss ₍₁₎	Poss _(1/2)
b. Possessive-Adnominal (POSS-ADN)	Poss	Poss	Obl

Sent = sentential dependent-marking, Poss = dependent-marking of possessors in possessive NPs, Obl = dependent-marking of oblique nominals

Possessive types. The Possessive-Incorporating and the Possessive-Relative types use valency-lowering strategies, in the sense that the transitive action nominal has only one external argument, its other argument either forming a compound with it or being expressed within a relative clause referring to the action nominal. Finally, there are nominalization patterns which are only used under special conditions: either when the arguments have particular lexical and/or referential characteristics or when only one of them is present.

4.1. Mixed

The Mixed type (MIX) is characterized by the genitivization of S, the assimilation of A to some oblique NP (the agent in passives), and the retention of sentential marking for P.

Both European examples of MIX languages are problematic. MIX ANCs occur in Bulgarian, but only in bureaucratic style and under very special conditions. The preposition *na* 'of', which normally introduces P to action nominals, may be omitted when P itself has an additional dependent introduced by the same preposition (Ivan Derzhanski p.c.). Thus, in (30a), which follows the normal ERG-POSS pattern, the first *na* may be omitted and the first P appears in the same non-marked form as in the corresponding finite clause:

- (30) a. pokriv-ane-t-o [na razxod-i-t-e na komandirovanija]
 cover-AN-DEF-N.SG of expense-PL-DEF-PL of business.traveller
 ot fondacija-t-a
 from/by fund-DEF-F.SG

- b. pokriv-ane-t-o [razxod-i-t-e na komandirovanija] ot
 cover-AN-DEF-N.SG expense-PL-DEF-PL of business.traveller from/by
 fondacija-t-a
 fund-DEF-F.SG
 'the fund's covering the expenses of the one who makes a business trip'

Hoekstra (1986: 566) gives example (31b) as a possible pattern for Dutch ANCs with bare infinitives. However, all my Dutch informants consider ANCs of the MIX type as highly exceptional, if possible at all.

- (31) a. (dat) Jan zijn broertje vermoordt
 'that John his brother kills'
 b. (?) het zijn broertje vermoorden door Jan
 the his brother killing by John
 c. (dat) Jan's broertje door hem vermoord werd
 'that John's brother was killed by him'

Outside Europe, MIX ANCs occur in Thai and Maori.

4.2. Possessive-Relative

In the Possessive-Relative type (POSS-REL), the P of transitive action nominals is marked as its direct dependent, while the A is expressed within the relative clause referring to the action nominal. Since action nominals which are derived from transitive verbs may have only one overt argument directly depending on it, this pattern is valency-lowering.

Only two languages in the whole sample, Hungarian (32) and Hausa, resort to the POSS-REL type.

- (32) Norvégia Németország által történő / történt
 Norway Germany of happen-PRS.PART / PST.PART
 elfoglal-ás-a
 occupy-AN-POSS.3.NOM.SG
 'Germany's occupation of Norway'

4.3. Possessive-Incorporating

In the Possessive-Incorporating type (POSS-INC), both S and A genitivize, while P forms the first part of the complex action nominal.

In Europe, Icelandic (33) is an example of this type:

- (33) Hús-bygg-ing-ar Pétur-s taka alltaf mikinn tíma
 house-build-AN-PL.NOM Peter-GEN take:PRS.3PL always much time
 'Peter's building of houses takes always a lot of time'

Nominalizations of this type are valency-lowering insofar as their head nominals, derived from transitive verbs, have only one argument (of the set (A, P)), as compared to the corresponding verbs with two. The other argument, P, is compounded with the action nominal to form a complex action nominal, in a process reminiscent of noun incorporation.

It is not always easy to obtain information on the regularity and syntactic productivity of this pattern. Thus, in Russian, action nominals with incorporated P represent a very limited class of words often referring to highly ritualized activities; cf. *čaeplitie* 'tea-drinking' and *kofepitie* 'coffee-drinking' (the latter not for all speakers), but not **sokopitie* 'juice-drinking', and the formation of such words is not productive at all. The ability of a language to form POSS-INC ANCs seems to be correlated with its general ability to form N+N compounds (and in Russian such compounds are extremely rare). At least the following European languages in the sample regularly form POSS-INC ANCs: Estonian, Hungarian, German, Dutch, English, Icelandic, Danish, Swedish, and Kurdish. Outside Europe, compounding of action nominals with their Ps occurs, for example, in Quechua, Ewe (Niger-Congo: Kwa), and Persian.

All POSS-INC languages in my world sample, with the exception of Ewe, alternate between this ANC type and some other nominalization type(s). And there are clear semantic and formal restrictions on the applicability of POSS-INC, similar to the general restrictions on compounding. Thus, P in such constructions tends to be non-referential and non-individuated, with the rare exceptions of examples like *die Humboldt-Interpretation von Chomsky* 'Chomsky's interpretation of Humboldt', and it cannot usually have dependents of its own. In this respect, POSS-INC differs from the all other ANC types examined so far, and is close to the restricted DBL-POSS type, to be described in the next section.

And in general, the fact that it is the P which is "incorporated" once again iconically reflects the greater conceptual closeness between the verbal noun and its P as compared to A, similarly to the word order patterns stated for DBL-POSS in Section 3.4.1.

4.4. Restricted Double-Possessive

In Section 3.4.1 we saw languages in which both A and P genitivize more or less independently of their semantic, referential, and/or formal characteristics. However, somewhat more frequent are languages in which one of the possessor positions and forms is restricted to a certain class of possessor-nominals. Whenever the S or A

belongs to that class of nominals, it may get the appropriate possessor form whereas P genitivizes according to the other pattern and the whole ANC belongs to the DBL-POSS type.

Illustrating from Russian, in (34a) and (34c) the single proper name *Petja* has a special prenominal possessive form, to be used as S and A in DBL-POSS ANCs, whereas for the NP *znamenityj ital'janskij pianist* 'a/the famous Italian pianist' this option is excluded: it takes genitive as the possessor (34b), and the corresponding ANC follows the ERG-POSS pattern (34d).

- (34) a. Pet-in dom
 Peter-POSS.M.SG.NOM house:NOM.SG
 'Peter's house'
- b. dom znamenit-ogo ital'jansk-ogo pianist-a
 house:NOM.SG famous-M.SG.GEN Italian-M.SG.GEN pianist-GEN.SG
 'the house of a/the famous Italian pianist'
- c. Pet-in-o ispoln-enie Ravel-ja
 Peter-POSS-N.SG.NOM perform-AN.SG.NOM Ravel-GEN.SG
 'Peter's performance of Ravel'
- d. ispoln-enie Ravel-ja znamenit-ym
 perform-AN.SG.NOM Ravel-GEN.SG famous-M.SG.INST
 ital'jansk-im pianist-om
 Italian-M.SG.INST pianist-SG.INST
 'the performance of Ravel by a/the famous Italian pianist'

Crucially, such "restricted" DBL-POSS ANCs occur in those language which have a clear formal and structural distinction between two types of possessors. Thus, in Romance, Slavic, German, and Dutch there is a restricted class of prenominal possessors, while most other possessors appear postnominally, and in ANCs S and A assimilate to prenominal possessors (of course, only if they belong to the class which may build such forms), while P takes the form of postnominal possessors. The word order in such "restricted" DBL-POSS ANCs is, thus, A-AN-P, isomorphic to the basic sentence word order SVO in the languages under consideration. Typically, the class of prenominal possessors consists of pronouns (as in the Romance), and may, in some languages, also include other highly referential/animate nominals such as proper names, kinship terms, and/or definite nominals referring to humans (prenominal genitives in Dutch and German and possessive adjectives in Slavic). In such cases there is, thus, a *referentiality split* within the ANC system of a language. Interestingly, the option of following the "restricted" DBL-POSS pattern with such As does not necessarily exclude their possibility of entering into ANCs of the type which is used for other kinds of As. On the contrary, thanks to this additional option, ANCs with highly referential As can sometimes have an overt expression of the se-

mantic oppositions between various readings (propositions, facts, events), as will be shown in (41) in Section 5.1).

Outside Europe, the restricted DBL-POSS pattern is attested for ANCs with pronominal As in Samoan (Polynesian).

4.5. One argument only

In some languages, ANCs with only one argument may have a pattern of their own. Here I will limit myself to two special cases: the use of the genitive in SENT languages and the use of typically “subjective” forms with “objective” interpretation.

To begin with the first, in a few SENT languages, in which ANCs normally retain their sentential dependent-marking, the genitive case may instead be used for the only overt argument in ANCs under special conditions.⁸

In Tabasaran (35a) and Budukh (35b), the S may choose between the absolutive and genitive cases, i.e., between retaining its sentential dependent-marking or genitivizing:

- (35) a. daši/dašijin R-uli-b-az kiliyurajč^ha
 father:CL1:NOM/GEN come-AN:CL1-DAT awaited:we
 ‘We waited for Father’s coming’ (Bogatyrev & Boguslavskaja 1982: 85, (66–67))
- b. zəs ja šid/šij-u ŋošX-ar jikaži
 I:DAT my brother:ABS.SG/GEN.SG come-AN.ABS.SG want
 ‘I want that my brother comes’ (Boguslavskaja 1989: 119)

Interestingly, action nominals retain verbal class agreement with their S independently of the latter’s actual form (which is the only exception to Universal 6 in Section 5.1.5).

Bezhta allows the genitivization of S and P in the absence of an overt A in the same ANC, while Rutul (36) and Tsakhur allow the genitivization of all three, S, P, and A under similar conditions:

- (36) a. hijvan/hijvan-ed vaX-in
 horse:ABS.SG/GEN.SG run-AN.ABS.SG
 ‘a/the horse’s running’
- b. did-i/did-di hiʔ-in javašdiʔi
 father-ERG.SG/GEN.SG build-AN.ABS.SG slow
 ‘Father’s building is slow’
- c. Xal/Xal-di hiʔ-in javašdiʔi
 house-ABS.SG/GEN.SG build-AN.ABS.SG slow
 ‘The building of the house is slow’ (Boguslavskaja 1989: 93)

From these languages it is only a short step to Agul, which not only uses the genitive arguments in the absence of other overt arguments in an ANC, but regularly alternates between SENT and POSS-ACC, as in (37). Interestingly, the formal opposition between the two types of nominalizations corresponds to a semantic opposition between fact and process or manner readings (we will return to this in Section 5.1).

- (37) a. t^hindis q'abul-xindaw c^{oh}uji šer wargub
 he:DAT not-liked brother:ERG water:ABS carry:AN:ABS
 'He did not like the fact that the brother carried water'
 b. t^hindis q'abul-xindaw c^{oh}ujin šer wargub
 he:DAT not-liked brother:GEN water:ABS carry:AN:ABS
 'He did not like the way in which the brother was carrying water' (Boguslavskaja 1989: 123)

Leaving Daghestan, in the northern dialects of Basque (N'Diaye 1970: 141, Saltarelli 1988: 155), which normally resorts to SENT ANCs, the P of ANCs may be put in the genitive when no other argument in the ergative or dative is present (compare (38) with (5) above). Since this option is neither available for S (which normally has the same marking as the P) nor for A, P in ANCs with one argument present is opposed to both A and S:

- (38) [gizon-aren ikus-te-ak] mesede egi-n
 man-GEN.SG see-AN-ERG.SG help do-PERF
 z-io-n
 3ERG.SG-(PST-3ABS-AUX2-)-3SG.DAT-PST
 'The sight (seeing) of the man did him/her good' (Saltarelli 1988: 155)

Up to now, most of the examples in this section can be interpreted as showing *the cross-linguistic tendency to assimilate ANCs with a single argument to non-derived NPs*, even in those languages in which most ANCs (in particular, transitive ANCs) retain sentential marking. Italian substantivized infinitives are interesting in that this pattern is obligatory: only constructions with transitive infinitives show the SENT pattern, while S with intransitive infinitives is obligatorily marked with the possessive preposition *de* (Gaeta 1997: 31), cf. *il ricercare Giovanni la verità* 'Giovanni's searching the truth' (SENT) vs. *l'arrivare dei liberatori* 'the arrival of the salvators' (S as possessor). At the opposite pole are languages in which ANCs normally look like well-behaved NPs. We will focus on the DBL-POSS type (including its restricted variant) in which A and P correspond to two distinct possessor phrases.

This distinction between A and P tends to be retained even in those cases where only one of the arguments is present. Thus, Czech, a language with a referentiality split in which DBL-POSS ANCs involve singular definite As, shows an opposition between *matčina ztráta* (mother:POSS.F.NOM.SG lose:AN.NOM.SG) 'mother's loss (of something)' vs. *ztráta matky* (lose:AN.NOM.SG mother:GEN.SG) '(someone's)

loss of (his) mother' (Comrie & Thompson 1985: 377). This is quite similar to English, where there are strong tendencies to interpret the prenominal genitive as coding A and S and the postnominal *of* genitive as coding P.

However, there are exceptions to the tendencies mentioned above. Thus, both in the English ANC *Bill's execution* and in the following Russian examples the preposed possessive forms must be interpreted as corresponding to P:

- (39) a. Knigi ja poslal; izvestite menja ob ix
 book:ACC.PL I:NOM sent; inform me about their
 polučenii
 receive:AN.LOC.SG
 'I have sent the books; inform me about the receipt of them'
- b. On sčitaet svoj arest protivozakonnym
 he:NOM considers his:RFL.ACC.SG arrest:AN.ACC.SG illegal:M.INST.SG
 'He considers his own arrest to be illegal' (Padučeva 1982: 58)

There are, however, strong restrictions on the use of preposed possessive forms as the P in ANCs, as can be seen in (40):

- (40) a. *On raskaivaetsja v tvoem oskorblenii
 he:NOM regrets in your:N.LOC.SG insult:AN.LOC.SG
 'He regrets having insulted you' (Padučeva 1982: 57).
- b. *the novel's understanding

Several factors have been suggested to account for such differences in acceptability: animacy vs. inanimacy of P (Padučeva 1982: 57–58), the contrast between verbs which require vs. permit a P (Comrie & Thompson 1985: 371–372), or the difference between "affected" and "unaffected" objects (Anderson 1979, quoted in Giorgi & Longobardi 1988). In addition, as Giorgi and Longobardi show, English is much more restricted in this respect than the Romance languages (compare (41a/b), from Italian and French, with (40b) above).

- (41) a. A proposito di quel romanzo, la sua comprensione richiede notevoli capacità ermeneutiche
 'Concerning that novel, its understanding requires remarkable hermeneutic skills'
- b. (Ce problème est très difficile.) Sa compréhension exige beaucoup de travail
 '(This problem is very difficult.) Its understanding needs a lot of work'
 (Giorgi & Longobardi 1988: 147–148)

Giorgi and Longobardi hypothesize that the contrasts may be connected with a general typological difference between English (and Germanic in general) and Romance with respect to the parameters of "Head-Complement" and "Head-Subject" ordering,

which are set in the same direction in Romance, but in different directions in Germanic. German, however, is less restricted than the other Germanic languages in allowing “unaffected” Ps to appear as prenominal genitives or possessive pronouns:

- (42) Was die Algebra betrifft, ist ihre Kenntnis sehr wichtig
 ‘As far as algebra is concerned, its knowledge is very important’ (Giorgi & Longobardi 1988: 153)

5. Generalizations about action nominal constructions

5.1. Complement-deranking vs. complement-balancing as type predictors

The typology of ANCs raises several important questions, among them this: Is the choice of nominalization patterns in a particular language accidental? If not, what are the determining factors?⁹ Elsewhere (Koptjevskaja-Tamm 1993: 221–246) I have examined several parameters which are plausible correlates. Limiting myself to the four major nominalization types, I will here only touch on one of them: the place of ANCs in the overall system of noun clauses in a language.

The general idea is that the structure of ANCs in a language is connected to their functions, frequency, and ultimately their semantics. ANCs refer to events, actions, processes and the like, but function more or less like other NPs. In other words, they function as predications which are subordinate to other predications. Thus, they are involved in the subordination system where they constitute a type of noun clauses. Although noun clauses are used for various purposes and in various contexts, by far their most typical function is to be arguments of the matrix predicate or sentential complements. There is considerable cross-linguistic variation about precise functions, frequency, and semantics of ANCs, depending partly on the noun clause types available.

The major distinction in this connection is that between complement-balancing and complement-deranking languages.¹⁰ In complement-balancing languages, at least some noun clauses have predicates which look like predicates in independent or matrix clauses; thus, both the matrix and the subordinate predicates remain structurally of the same rank. In complement-deranking languages, the predicate in noun clauses is always deranked, i.e., the form of the predicate itself signals the subordination of that clause. The boundary between these two language types is not always clear-cut, for two main reasons. First, many languages extend the use of direct quotations to cover complements of other types of verbs (e.g., the equivalent of the sentence ‘I am afraid of falling’ would have the structure ‘I am afraid saying “I will fall”’). Second, complement-deranking languages may start using balanced subordinate clauses under the influence of languages they are in contact with (as, for

example, Turkish and Nenets). Thus, the designation "complement-deranking language" should be interpreted as "language which predominately uses complement-deranking".

The data show a clear correlation between complement-deranking or complement-balancing and the choice of nominalization patterns. The following scale orders the four major nominalization types according to their degree of sentence- or NP-likeness:

SENT	>	POSS-ACC	>	ERG-POSS	>	NOMN
more sentence-like		← ----- →				more NP-like

The most sentence-like type, SENT, occurs predominantly in complement-deranking languages, while the most nominal type, NOMN, occurs exclusively in complement-balancing languages. The two major intermediate types, POSS-ACC and ERG-POSS, occur in both language types, but the main tendency is the same: complement-deranking favours the more sentence-like of these two patterns, POSS-ACC (for statistics see Koptjevskaja-Tamm 1993: 226–228). The overall generalization is thus as follows:

ANC UNIVERSAL 4: THE BALANCING PREDICTIONS

Complement-balancing languages favour assimilation of ANCs to non-derived NPs, while complement-deranking languages favour retention of sentential marking in ANCs.

The distinction between complement-deranking and complement-balancing, though being a relatively good predictor of nominalization patterns, probably reflects only a part of the truth. It may very well be the frequency of ANCs in productive syntactic constructions, their functions, and ultimately their meanings which are more directly connected to the choice of possible ANC types. In such a vein, Hengeveld (1998) shows that there is a systematic correlation between the semantic type of adverbial subordinate clauses and the way they are expressed in European languages, and Cristofaro (1997) arrives at similar results for complements, adverbial subordinate clauses, and relative clauses in a world-wide 80-language sample.

Several languages in my sample provide examples of comparable form-function dependencies in the domain of ANCs in that propositional or fact interpretations are linked to more sentence-like ANCs than event or process interpretations. English, with its "verbal" and "nominal gerunds", such as *John's performing the song* (POSS-ACC) vs. *John's performing of the song* (DBL-POSS) is a widely quoted example of this correlation: while the former may refer to propositions and facts, but hardly to events, the latter are much freer in their application. Similarly, as illustrated in (37), in Agul the formal opposition between SENT and POSS-ACC corresponds to a semantic distinction between fact and event (process, manner) readings. Finally,

in Russian (and other Slavic languages) ANCs with pronominal and other highly referential/animate As can be formed either according to the “restricted” DBL-POSS pattern (cf. (34a)) or to the POSS-ERG pattern, which is otherwise the normal pattern for the majority of As. The opposition between DBL-POSS and ERG-POSS ANCs correlates with the opposition between the process/event and fact readings, cf. (43a–b):

- (43) a. DBL-POSS: process/event interpretation
 Pet-in-o včerašnee ispoln-enie
 Peter-POSS-N.SG.NOM yesterday:ADJ perform-AN.SG.NOM
 Ravel-ja bylo velikolepno.
 Ravel-GEN.SG was wonderful
 ‘Yesterday’s performance of Ravel by Peter was wonderful’
- b. POSS-ERG: fact interpretation
 Ispolnenie Petej Ravelja včera bylo
 perform-AN.SG.NOM Peter-INST Ravel-GEN.SG yesterday was
 neumestno.
 out.of.place
 ‘It was out of place for him to perform Ravel yesterday’

Note that there is a concomitant difference between the two constructions above: Russian ANCs with the fact reading allow a very limited number of time adverbials (like *včera* ‘yesterday’ in (43b)), while in non-fact nominalizations such adverbs have to be substituted for by the corresponding adjectives (like *včerašnee* in (43a)). Thus, fact ANCs are more sentence-like than non-fact ANCs also in their compatibility with time adverbials as opposed to adjectives. A few other languages show similar correlations between semantically different ANCs and their different combinability with typical adverbial vs. typical adnominal modifiers, as in Italian *il suo mormorare sommestamente* ‘his whispering softly’ (e.g., as the subject of ‘... does not imply that he is in trouble’) vs. *il mormorare sommesso del mare* ‘the soft whisper of the sea’ (e.g., as the object of ‘I heard ...’, cf. Zucchi 1993), or in their ability to take typical verbal categories, as in Turkish, where proposition/fact readings correspond to ANCs headed by *-dİg* nominalizations, distinguishing between future and non-future, while event readings correspond to “tenseless” *-mA* nominalizations (George & Kornfilt 1983: 107, Koptjevskaja-Tamm 1993: 46–49).

Clearly, further research is required on the possible connections between the semantics and morphosyntax of the different ANC types.

5.2. The form of constructions

5.2.1. Lack of autonomy

The first and the most significant universal about the form of ANC's was already given in Section 2: ANC's are derivative – or, more specifically:

ANC UNIVERSAL 1: ANC A PARASITE (restated)

In all languages, ANC's use marking (both dependent-marking and head-marking) also used in finite clauses or in possessive NPs.

Many languages have syntactic means restricted either to finite clauses or to NPs – e.g., the genitive case in Quechua and Korean, only possible in NPs, or the accusative case in Russian, not allowed in non-derived NPs nor in ANC's. By contrast, ANC's never use means of their own, being modelled on finite clauses and NPs.

It has been common practice in Generative Grammar to describe language acquisition as if it were instantaneous. For example, Chomsky (1975: 121–122) maintains that, though “obviously false”, this simplifying assumption is “nevertheless a legitimate one and provides a proper basis for pursuing a serious inquiry into human cognitive capacity”. Chomsky's focus is on how the learner, innately equipped with Universal Grammar, constructs linguistic hypotheses in the light of (frugal) experience. When he concludes that no “substantial differences in the result of language learning depending on such factors as order of presentation of data, time of presentation, and so on” are found, this does not take into account that there is a certain order in which new structures are acquired, independently of the input. It is here that the assumption of instantaneous learning precludes interesting generalizations. An important optimization aspect of a developing grammar is how forms and constructions that are learned at a given point are fitted into a system consisting of forms and constructions learned earlier. A minimal requirement is that the changes that are made when a new form or construction is added are such that the system continues to function. Beyond this requirement, different strategies are possible. The view that is taken here is that when a new construction is added to a grammar, it is, as far as possible, modelled on constructions already attained.

Action nominal constructions and other types of subordinate clauses are fairly complex constructions corresponding to quite advanced communicative needs, appearing relatively late in language acquisition and probably in language evolution. As such, they must fit the already existing linguistic system in such a way that both production and perception of the new system will not be inhibited. For ANC's, the choice of a model is restricted to finite clauses and non-derived NPs. More specifically, since action nominals both morphologically and semantically occupy an intermediate position between prototypical verbs and nouns, it is justified for them to have syntactic properties of either one or both of these word classes. Prototypical

constructions for verbs and nouns are finite clauses and NPs respectively, in which these words are lexical heads. Thus, ANC's with action nominals as lexical heads are modelled on either one or both of these two constructions. An interesting point in this connection is that of all NPs, it is possessive NPs which serve as a model for ANC's.

In addition, although ANC's vary considerably across languages in the degree of their similarity to finite clauses and possessive NPs, this variation is severely restricted, as will be seen presently.

5.2.2. Word order

In many languages, there is no word order difference between clauses and NPs, owing to harmonious serialization of heads and their dependents. For these languages, distinguishing between sentential and nominal word order in ANC's would not make sense. Such is the situation in V-first/Noun–Genitive and SOV/Genitive–Noun languages. For languages with different head-dependent word orders, my sample licenses the generalization that ANC's always follow the nominal pattern. More specifically, arguments in ANC's precede or follow the head in the same way as possessors precede or follow the possessee in non-derived NPs. The very fact that a word has nominal inflectional characteristics seems to imply a certain relative order between the word and its dependents, even though the form of the dependents can vary. Thus:

ANC UNIVERSAL 5: ORDER

Head-dependent word order is the same in ANC's and non-derived NPs (with the possible exception of some Kwa languages).

A piece of particularly clear evidence for the force of this tendency is provided by the SENT (substantivized) infinitives in Spanish and Italian, in which the subject follows the infinitive, as opposed to its normally preceding finite verbs, cf. It. *il ricercare Giovanni la verità* 'Giovanni's searching the truth' vs. *Giovanni ricercava la verità* 'Giovanni searched for the truth'. Thus, with respect to word order, the subject of infinitives behaves like other adnominal nominal modifiers, even though its form clearly differs from those and otherwise occurs only in clauses. There are some sporadic exceptions, as in the following quotation from Camilo José Cela (Sp) *daba por pensar que hubiera [al él morir]* 'he gave the impression of having resurrected when he died' (lit. 'at-the he die:INF', de Bruyne 1993: 462).

Within the general restriction imposed by ANC Universal 5, there are additional, more specific principles governing precedence relations in ANC's, such as the principle of word order in DBL-POSS ANC's stated in Section 3.4.1, by which the P is closer to the action nominal than the A, iconically reflecting the greater conceptual closeness between a verbal noun (and ultimately a verb) and its object as compared

to the subject. Similar tendencies are in general at work in ANC_s, but are occasionally superseded by other factors. This is again demonstrated by the Romance “substantivized” infinitives quoted in the preceding paragraph, in which both the A and the P follow the infinitive, but the A is closer to it than the P. At least Italian may use an option which conforms to this tendency without giving up other cross-linguistically common requirements on the word order in ANC_s. This option is restricted to pronominal A_s, which can turn up as pronominal possessors, and the whole ANC will thus show the POSS-ACC type (cf. *il suo ricercare la verità* ‘his searching the truth’, in addition to *il ricercare lui la verità*, with the normal SENT pattern). Pronominal possessors are “privileged” in occupying a pronominal position, as opposed to all other possessors, and this additional structural position allows Italian “substantivized” infinitives to have a word order A-AN-P, which both conforms to the normal head-dependent word order in NP_s (ANC Universal 5), is isomorphic to the basic sentence word order, and allows the P to be closer to the AN.

5.2.3. Head-marking

In general, head-marking in ANC_s tends to be more NP-like than clause-like, but there are some instances in which ANC_s retain sentential head-marking. To repeat the relevant universal motivated in Section 3.1:

ANC UNIVERSAL 2: THE HEAD-MARKING AVERSION OF A
ANC_s never retain sentential head-marking for the A.

In Europe, sentential head-marking in ANC_s is only found in a few Daghestanian languages, where it is retained for both S and P. Outside Europe, however, there are a few other instances in which only P but not S retains its sentential head-marking, including some dialects of Quechua and the Bantu languages. This suggests that the three arguments are arranged in the following hierarchy in their proneness to lose sentential head-marking:

	A	>	S	>	P
sentential head-marking:	impossible		possible		

5.2.4. Dependent-marking

Compared to word order and head-marking, dependent-marking in ANC_s (the basis for the present typology of ANC_s) shows the greatest range of variation. Still, it is subject to certain limitations, connected with the relative proneness of the different arguments to retain sentential marking. Thus:

ANC UNIVERSAL 6: THE DEPENDENT-MARKING AVERSION OF A
Of the two arguments in transitive ANC_s, the one most likely to lose its sentential dependent-marking is the A.

What happens when sentential dependent-marking is not retained is the following:

ANC UNIVERSAL 7: ALL DEPENDENT-MARKING OR ONE GENITIVE

Either all arguments in a transitive ANC retain their sentential dependent-marking or at least one of them genitivizes (except for the marginal MIX type).

As Croft (1995) suggests, there is another interesting generalization about the relative proneness of the different arguments to genitivize:

ANC UNIVERSAL 8: S GENITIVE-PRONE

If an ANC is not of the SENT type, then the S of an intransitive ANC is always genitivized.

As shown in Section 4.5, SENT languages too may show the same tendency for S to genitivize. This is easy to understand: intransitive action nominals are similar to well-behaved NPs in having only one unmarked dependent (in the general case) and, thus, pose minimal problems in assimilating to such NPs.

5.2.5. Relations between dependent-marking and head-marking

The last universal here is a generalization about the relative ease with which sentential dependent-marking and head-marking are retained in ANCs:

ANC UNIVERSAL 9: HEAD-DEPENDENCE INTERDEPENDENCE

If an ANC retains its sentential head-marking for some argument, it also retains its sentential dependent-marking for that argument.

The only exception to this universal is one type of intransitive ANCs in Tabasaran mentioned in Section 4.5 (example (35a)), where the action nominal agrees in class with an S in the genitive case.

To sum up, cross-linguistic variation in ANC structure is severely restricted in two respects. First, the three kinds of overt coding – word order, head-marking, dependent-marking – form a hierarchy of their nominal and sentential properties. Second, arguments differ systematically as to their proneness to retain sentential marking. In other words, the expressive means exploited by ANCs form a hierarchy which predicts which combinations of nominal and sentential properties are possible. This hierarchy is presented in Figure 1, where expressive means are arranged according to their relative proneness to assimilate to the patterns found in NPs.¹¹

6. Europe vs. the world

We are now ready to answer the introductory question about the relation between European and other languages in the domain of ANCs.

word order, head-marking of A	↑	always NP-like
head-marking of S		
dependent-marking of S		more often NP-like
dependent-marking of A		
head-marking of P	↓	always NP-like
dependent-marking of P		

Figure 1. Hierarchy of sentential vs. NP-like syntactic means in ANCs

To start with, European languages generally have a well-developed category (or categories) of action nominals. Such a category, as defined in Section 1.1, is not universal, and many languages lack it – including many North American Indian and probably all Australian languages. There are at least two main types of constructions which share certain properties of ANCs but still cannot count as such.

First, a number of languages have regular verbal “nouns” which, however, have a *defective paradigm* as compared to normal nouns. For example, the Samoyedic languages of Siberia (Nganasan and Enets) have several verbal formations which inflect, but only for some of the cases (*Strukturnye tipy* 1986: 118–132). Since these words do not inflect in the same way as non-derived nouns, they cannot be classified as action nominals according to the definition adopted here. Closely related Selkup has action nominals with the whole inflectional paradigm.

Second, many languages have so-called CLAUSAL NOMINALIZATIONS, whereby the whole finite clause gets nominal inflectional features, while its head cannot be considered a noun (Comrie & Thompson 1985: 392). More specifically, the verb in such nominalized clauses normally retains all its verbal characteristics (such as person and number inflection) and does not attach nominal derivational affixes, although the whole nominalized clause may be more or less similar to NPs. Clauses may be nominalized in different ways, e.g., by taking an article or by attaching nominal inflectional suffixes to finite verbs. In the latter case, the verbs inflect in the same way as non-derived nominals, but there may still be arguments against considering them as action nominals. Clausal nominalizations typically do not co-exist with action nominals in one and the same language, although languages with both types of constructions are on record.

In Europe, verbal nouns with defective paradigms are found, for instance, in the two Finnic languages Finnish and Estonian, where they are known as “inflected infinitives”. These two languages, however, have regular action nominals as well. In contrast, Gagauz, a Turkic language, has lost the fully inflecting verbal nouns which are so typical of the Turkic languages in general, and only rarely uses a few of their more or less fossilized case forms (Pokrovskaja 1978: 129). Clausal nominalizations

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Table 2. Distribution of major ANC types in the languages of Europe compared to the world's languages

ANC type	Language families in Europe	Totals in percentage Europe / World 60 lgs / 70 lgs
SENT	Basque – 1, Northeast Caucasian – 18, Indo-European – 2	35 / 21,4
POSS-ACC	Uralic – 1, Altaic – 1, Northeast Caucasian – 1, Indo-European – 2	8,3 / 34,2
ERG-POSS	South Caucasian – 2, Uralic – 2, Indo-European – 18	36,6 / 32,8
NOMN	South Caucasian – 1, Uralic – 2, Semitic – 1, Indo-European – 11	25 / 18,6

are rare in the European languages. According to my sources, they may be found in Turkish and Ancient Greek (which have also action nominals), as well as in Svan (South Caucasian).

The European languages manifest all the ANC types which are found in the whole world sample. The distribution of the major ANC types among the European languages is summarized in Table 2 and shown in Map 1.

Strikingly, the cross-linguistically most frequent ANC type, POSS-ACC, is extremely rare in Europe. SENT ANCs are exclusively concentrated in two families on the southern periphery of Europe, which also show other features which are exotic by European standards, such as ergativity and complement-deranking (see the euroversals in Section 3.1).

By far the largest part of Europe is inhabited by peoples who speak languages with ERG-POSS and NOMN ANCs, the two types which signal the relation between head and P differently from the corresponding finite clauses. Thus, in these European languages, the ability to inflect according to the nominal pattern is not compatible with verbal government. Words tend to be classified unambiguously as either verbs or nouns according to the combination of these two features, and this sharp distinction is retained even in less prototypical cases.

Notes:

* Lithuanian ANCs with two genitives can be classified as both DBL-POSS and ERG-POSS (cf. Section 3.4.1)

** DBL-POSS occurs as a marginal construction; POSS-ACC only with pronominal As

*** ERG-POSS occurs as a marginal construction

Only a part of the Northeast Caucasian languages is shown on the map.

Map 2. Four major ANC types in the languages of Europe

Appendix: The European sample

Afroasiatic	
Semitic	Maltese
Indo-European	
Baltic	Latvian, Lithuanian
Slavic	Bulgarian, Macedonian, Serbo-Croatian, Russian, Polish, Czech
Celtic	Old Irish, Modern Irish, Scottish Gaelic, Welsh
Germanic	Icelandic, Swedish, Norwegian, Danish, Dutch, German, English
Italic	Latin, Spanish, Catalan, French, Italian, Rumantsch, Rumanian
Albanic	Albanian
Hellenic	Classical Greek, Modern Greek
Armenian	Modern Armenian
Iranian	Kirmandji
Altaic	
Turkic	Turkish, Gagauz
Uralic	
Finno-Ugrian	Estonian, Finnish, Hungarian
Samoyedic	Nenets
Northeast Caucasian	
Nakh	Ingush
Avar-Andi-Dido	Avar, Godoberi, Akhvakh, Chamalal, Khvarshi, Bezhta
Lak-Dargwa	Lak, Dargwa
Lezgic	Archi, Tabasaran, Agul, Rutul, Tsakhur, Budukh, Khinalug, Lezgian, Kryz
Northwest Caucasian	Abkhaz
South Caucasian	Georgian, Megrelian
isolate	Basque

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Notes

1. Although all parts of this definition present certain problems (for details see Koptjevskaja-Tamm 1993: 9–21), there are still sufficiently many clear cases of action nominals.
2. Grimshaw's (1990) concept of argument structure makes a sharp distinction between "complex event nouns", which have an argument structure, and all other nouns which do not.
3. Although Nichols' (1986) terms "head-marking" and "dependent-marking" were originally meant to refer to morphological marking, they will here be used to cover both bound and analytic markers. Thus, "dependent-marking" here corresponds to both "dependent-marking" and "dependent-association" in the preceding chapter.
4. Vanvolsem (1983: 92–104) argues that substantivized infinitives appear in all the functions typical of normal nouns, and their (non-)combinability with prepositions in these functions completely parallels that of the latter. For Spanish the situation appears to be more complicated in that "substantivized" infinitives are not allowed in some nominal functions, e.g., as subjects of emotional or impersonal predicates such as *me gusta* 'I like' or *es fácil* 'is easy' (Vanvolsem, *ibid.*, 18). In these contexts infinitives obligatorily appear without articles, cf. *Me gustaría mucho conocer* (**el conocer*) *a tu hermano*

'I would very much like to meet your brother'. According to the criteria in Section 1.1, this might disqualify Spanish substantivized infinitives from counting as action nominals. However, if the presence or absence of articles is not taken as crucial and the two kinds of infinitives are considered together, they appear to meet the definitional criteria for action nominals. More research is needed for clarifying the relation between infinitives with and without articles. (For an inventory of constructions where "substantivized infinitives" regularly appear cf. Skydsgaard 1977, in particular vol. 2, Ch. 8.) I am grateful to Georg Bossong for drawing my attention to Romance "substantivized" infinitives.

5. Although *durch* can also be used in passive clauses for agents "that are not strictly agentive" (Comrie & Thompson 1985: 385), *von* can only mark the A in ERG-POSS ANCs in exceptional circumstances (e.g., if P is a clause: *die Behauptung von Napoleon, dass Ahmed trinkt* 'the allegation by Napoleon that Ahmed boozes').
6. Possessive prefixes and verbal agreement prefixes are, in turn, fairly similar to each other. For details see the preceding chapter in this volume, Section 5.1.2, example (105).
7. DBL-POSS ANCs occurred in Latin and Classical Greek. In Modern Greek, some deverbal nouns can take two arguments in the genitive. However, as Markantonatou (1992: 108–111) argues, the two genitives in such cases are not equivalent syntactically, insofar as one of them and the deverbal noun form some type of compound which behaves as a unit. This leads to the impossibility of modification of the first genitive dependent in (i) as opposed to the well-formedness of (ii). More important for our purposes is the fact that the head of such nominalizations has a result meaning and is not an action nominal; thus, an appropriate context for (i) would be 'is on the shelf to the right' and not 'took many years').

- (i)
i	metafrasi	tis	Odisia-s
the:F.SG.NOM	translation:NOM.SG	the:F.SG.GEN	Odyssey-GEN.SG
tu	makariti	Kakridi	
the:M.SG.GEN	late:M.SG.GEN	Kakridi:GEN.SG	
'the late Kakridi's translation of the Odyssey'			
- (ii)
*i	metafrasi	tis	makroskelus
the:F.SG.NOM	translation:NOM.SG	the:F.SG.GEN	long:F.SG.GEN
Odisia-s	tu	Kakridi	
Odyssey-GEN.SG	the:M.SG.GEN	Kakridi:GEN.SG	
'Kakridi's translation of the long Odyssey' (Markantonatou 1992: 108–110)			

8. The data on the Daghestanian languages in this section come mainly from Boguslavskaja (1989: 115–123).
9. Stassen (this volume) asks similar questions about noun phrase conjunction.
10. The terms "balancing" vs. "deranking" are taken from Stassen (1985).
11. This hierarchy finds obvious parallels in other "desententialization" or "deverbalization" scales such as those suggested in Lehmann (1988), Givón (1990), Cristofaro (1997), Kalinina (1998).

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