

Binominals and construct marking

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Abstract: Construct marking defined as a particular technique of marking the relationships between head nouns and their dependents is not limited to the few language families (Semitic, Nilotic, and Oceanic) in which the term of 'construct' is traditionally used to describe adnominal possession, and construct marking defined in purely formal terms can be used for semantic types of noun modification other than adnominal possession. The use of construct marking is however particularly widespread in adpossession construction. In the languages that make use of construct marking in their adpossession construction, it is common that the same markers also have a more or less productive use in the formation of binominals, and if changes affect the adpossession construction, it may happen that a former construct marker that has ceased to be used in adpossession construction subsists exclusively in binominal formation.

Keywords: binominal lexemes, adpossession construction, construct marking, head-marking vs. dependent-marking.

1. Introduction

This paper deals with a particular aspect of the general question of the distinction between binominal formation and adpossession (adnominal possessive) construction, or neutralization thereof, in the languages of the world. After some general comments on the distinction between binominals and adpossession construction and the possibility that the same formal elements can be involved in adpossession construction and binominal formation (section 2), construct marking is defined in section 3 as a particular technique of marking the relationships between head nouns and their dependents in the formation of noun phrases. The illustrations presented in section 3 show that this particular technique of marking the relationships between head nouns and their dependents is widespread in the world's languages, far beyond the few language families (Semitic, Nilotic, and Oceanic) in which the term of 'construct' is traditionally used to describe adnominal possession, and that construct marking defined in purely formal terms can be used for semantic types of noun modification other than adnominal possession. The use of construct marking is however particularly widespread in adpossession constructions. As developed in section 4, in the languages that make use of construct marking in their adpossession construction, it is common that the same markers also have a more or less productive use in the formation of binominals, and if changes affect the adpossession construction, it may happen that a construct marker that was formerly fully productive in adpossession construction subsists mainly, or even exclusively, in binominal formation.

2. Binominal formation and adpossessive construction

Whatever its formal characteristics, a binominal as defined in the introduction to this volume is a complex nominal lexeme whose formation involves two nominal lexemes. This means that, semantically, a binominal belongs to the same type as underived nominal lexemes. By itself (i.e., before being involved in the determination operations that create noun phrases denoting entities), a binominal only has a potential denotation, and is best defined as denoting a property (or a relation), exactly like underived nominal lexemes: in English, **textbook** denotes a property (or a set a potential referents), in the sense that any object can be characterized as being a textbook or not, exactly like **book**. Adpossessive construction encodes a different type of semantic operation, since it involves a noun phrase denoting an individual (the possessor) and a nominal lexeme (the possessee) whose set of potential referents is restricted to those considered by the speaker as having some kind of privileged relationship with the possessor: **John's book** does not denote a kind of book, but can be used to denote any particular book considered by the speaker as belonging to the personal sphere of an individual identified as **John**.

An important typological parameter is that, for easily understandable historical reasons, a construction formally identical to adpossessive construction may be recruited, with a variable degree of productivity, as a binominal formation pattern. For example, in English, **teacher's book** is a binominal whose formation involves the same N_1 's N_2 pattern as the adpossessive construction **John's book**.

In some languages, the overlap between adpossessive construction and binominal formation is only very marginal. For example, Mandinka (Mande) has a handful of binominal lexemes such as **Álá lá sùwôo** [God GEN horse.D] 'praying mantis', lit. 'God's horse', but as a rule, the binominal lexemes of Mandinka are formed according to a specific compounding pattern involving juxtaposition and special tone rules, and there is no possible ambiguity between for example the binominal **mùsù-sámátòo** [woman-shoe.D] 'woman's shoe' and the adpossessive construction **mùsôo lá sàmátôo** [woman.D GEN shoe.D] 'the shoe of the woman'.

In other languages, a pattern of binominal formation similar to adpossessive construction is productive. Depending on the determination system of individual languages, the distinction may be ensured by determiners. For example, in French, adpossessive construction involves the preposition **de** 'of', and N_1 **de** N_2 is also a productive way of forming binominals, but the absence of any determiner accompanying the second element of binominals such as **chaussure de femme** lit. 'shoe of woman' ensures the distinction with adpossessive construction, in which the second element is obligatorily determined. By contrast, in languages that do not have a system of obligatory determiners, the ambiguity may be general. For example, in Tswana (Bantu), depending on the context, **dì-dzǒ 'ts-á-dí-jǔtǎ** [CL8-food CL8-GEN-CL10-dog] can equally be interpreted as 'the food of the dogs' (where 'dogs' refers to a specific group of dogs) or 'dog food' (binominal denoting a particular kind of food).

Section 4 of the present paper examines the possibility of such overlaps in languages whose adpossessive construction involves a particular type of marking designated here as 'construct marking' defined and illustrated in section 3.

3. Construct marking in typological perspective

In this section, I propose a notion of *construct form of nouns* generalizing the notion of *construct state* traditional in Semitic linguistics.

3.1. Definition

In Semitic linguistics, ‘construct state’ applies to nouns immediately followed by another noun in the role of adpossessor, or by a bound pronoun in possessive function. In this context, nouns occur in a form distinct from their free form. For example, in Hebrew, the construct state of **malkah** ‘queen’ is **malkat**, as in **malkat ha-medina** ‘the queen of the country’. Similarly, in Moroccan Arabic, the construct state of **xala** ‘(paternal) aunt’ is **xalt**, as in **xalt l-bənt** ‘the aunt of the girl’ or **xalt-i** ‘my aunt’. In Ge’ez (Ethiosemitic), the construct state of nouns is straightforwardly formed by the addition of a suffix **-a** to nouns, as in **wald-a nəguś** ‘the son of the king’.

Cross-linguistically, it is relatively common that person markers cross-referencing the dependent noun attach to the head of adpossessive constructions. Such person markers are commonly designated as possessive affixes. Morphological marking of nouns licensing the adjunction of modifiers without cross-referencing them at the same time is perhaps less common, but by no means limited to the Semitic languages.

My proposal is to consider the construct state of Semitic nouns as a particular case of a more general notion of *construct marking of nouns* defined as follows. The two essential characteristics of construct marking are that:

- it is obligatory if the noun fulfills the role of head in a given type of *noun – modifier* construction;
- it does not cross-reference features of the modifier that conditions its use.

Note that, according to this definition:

- it is essential for a construct form to have its distribution conditioned by the combination with a given type of modifier, but depending on the individual languages, adnominal possessors are not the only type of modifier that may condition the use of a construct form;
- in a language in which nouns have a construct form morphologically distinct from their free form, construct form marking is obligatory when nouns combine with modifiers of a given type (in Semitic languages, NPs in adpossessive function), but does not necessarily imply the presence of such a modifier (in Semitic languages, the construct form is also used with adnominal possessors expressed as possessive suffixes);
- special non-autonomous forms of nouns used exclusively in derivation or (morphological) compounding, are NOT construct forms, at least in a strictly synchronic perspective, since the definition posited above refers to the ability for the construct form to act as the head of a syntactic construction.

Not all languages have noun forms meeting this definition. It is however a cross-linguistically valid definition in the sense that languages whose nominal system includes such forms are not

rare, and are not particularly restricted in their distribution across language families and geographical areas. In the remainder of this section, after clarifying some terminological points (3.2), I give an overview of construct forms in the languages of the world (3.3), and conclude with a brief discussion of the cross-linguistic variation observed in construct marking and the possible origins of construct marking (3.4).

3.2. Some terminological clarifications

Apart from Semitic, Nilotic and Oceanic are the only groups of languages in the descriptions of which the term ‘construct’ is commonly used as a label for inflected forms of nouns meeting the definition formulated above. But conversely, the term ‘construct’ is sometimes used for other types of forms, which may be a source of confusion. Consequently, a brief discussion of terminological conventions departing from those adopted here is in order.

3.2.1. Construct marking and case

Construct forms of nouns have in common with case forms that they are conditioned by the syntactic status of nouns, but case, as this notion is commonly used in grammatical descriptions, encodes the role of NPs as elements of broader constructions, irrespective of their internal structure, whereas construct forms encode information on the internal structure of NPs. In other words, case is a particular variety of dependent marking, whereas construct marking is an instance of head marking.

Neglecting this distinction and considering construct forms as cases would imply broadening the definition of case to any morphological variation of nouns carrying syntactic information. My position on this point is that the head *vs.* dependent marking distinction in noun-modifying constructions is crucial, in the description of individual languages as well as in typological perspective. Consequently, I do not retain the idea to reformulate the definition of ‘case’ in order to be able to consider construct forms as a particular type of case.

In this connection, it is important to evoke the problem raised by the use of ‘state’ in descriptions of Berber languages, which suggests a false analogy between the morphological distinction for which this term is used in Berber grammars, and the states of Semitic nouns

In Berber languages, nouns have two forms traditionally termed states. One of them is generally termed ‘free state’, and the other one ‘annexed state’, but some descriptions use ‘construct state’ instead of ‘annexed state’, which favors the confusion even more. The point is that, contrary to Semitic states, the so-called states of Berber nouns are involved in a mechanism of dependent marking, not of head marking: in Berber languages, the choice between the ‘free state’ and the ‘annexed state’ is not conditioned by the relation between the noun and its dependents, but by the function of the NP within a broader construction. In a broad typological perspective, the two so-called states of Berber nouns are simply cases – see Arkadiev (2015) for a recent discussion.

3.2.2. Construct marking and adnominalizers

‘Adnominalizer’ is the general term I propose for grammatical elements that can be analyzed as marking that a word or phrase at the periphery of which they are located fulfills a noun-modifying function.

Persian-style ezâfe markers, illustrated in (1), constitute a particular type of adnominalizer that can easily be confused with construct marking, although they clearly do not meet the definition of construct marking put forward in the present article.

(1) Persian (Pollet Samvelian, pers.com.)

(1a) **ketâb-e târix**
book-ADNZ history
'history book'

(1b) **ketâb-e târix-e sabz**
book-ADNZ history-ADNZ green
'green history book'

(1c) **ketâb-e târix-e sabz-e bi arzeš**
book-ADNZ history-ADNZ green-ADNZ without value
'worthless green history book'

(1d) **ketâb-e târix-e sabz-e bi arzeš-e Maryam**
book-ADNZ history-ADNZ green-ADNZ without value-ADNZ Maryam
'Maryam's worthless green history book'

The point is that the ezâfe marker **-e** could be analyzed as a construct marker in (1a), since it is then attached to a noun forming a *head – modifier* construction with the following word, but this analysis cannot be extended to its other occurrences in (1b-d), in which it attaches to a word that does not form a *head – modifier* construction with the following word or phrase. The possible confusion between such an adnominalizer and construct marking arises from a morphology-syntax mismatch: Persian-style ezâfe markers mark the syntactic role of the word or phrase to their right, but attach to the word to their left, with which they have no direct syntactic link: **ketâb(-e târix(-e sabz(-e bi arzeš(-e Maryam))))**).

3.2.3. *Construct forms and non-autonomous forms of nominal lexemes*

As already mentioned, forms of nominal lexemes used exclusively as the input of derivational or compounding operations do not meet the definition of construct form that delimits the scope of this cross-linguistic investigation, although they may be historically related to construct forms, as will be evoked in section 4.3. Attention should therefore be paid to the fact that some authors (for example Jacques (2012) on Rgyalrong languages) use the term of construct form (or state) precisely for non-autonomous forms of nominal lexemes that, at least synchronically, do not involve construct marking according to the definition adopted in this paper.

3.2.4. *Construct and pensive*

In the last decade, quite a few authors working on languages that have the type of nominal form for which I propose to generalize the label 'construct form' have designated the forms in

question by the term ‘pertensive’ introduced by Dixon (2010: 268). However, ‘pertensive’ as defined by Dixon and ‘construct’ as used in this paper are not entirely equivalent:

- in Dixon’s terminology, ‘pertensive’ is restricted to the marking of the possessee in adpossessive construction, whereas ‘construct’ as used in this paper extends to forms of nouns whose use may be conditioned by any type of modifier;
- in Dixon’s terminology, ‘pertensive’ includes any type of marking of the possessee in adpossessive construction (including person markers expressing the person of the possessor), whereas according to the definition put forward in this paper, a construct marker is a morphological element which is obligatory in the presence of a given type of modifier, but does not cross-reference features of the modifier that conditions its use.

3.3. Construct marking in the languages of the world

As already mentioned in section 3.1, construct marking has been first recognized in languages belonging to the Semitic family. In this section, I present some illustrations in languages belonging to other language families. This enumeration does not pretend to be exhaustive, it only aims at exemplifying the cross-linguistic variation in forms analyzable as instantiations of the general concept of construct form put forward in this paper.

3.3.1. *Construct forms in the languages of Sub-Saharan Africa*

3.3.1.1. Construct forms in Nilotic and other East African languages

In African linguistics, the existence of construct forms of nouns is mainly mentioned in descriptions of East African languages belonging to the Nilotic family. Andersen (2002) on Dinka includes detailed references on previous works dealing with this topic in other Nilotic languages.

Among Nilotic languages, Shilluk illustrates the case of a language with two distinct forms meeting the definition of construct form (Remijsen & Ayoker 2017). One of them (designated as ‘pertensive’ by Remijsen and Ayoker) is used when the noun is the head in adpossessive construction, the other one (designated as ‘construct form’) marks the noun as being modified by most modifiers other than possessors. For example, **gwôk** ‘dog’ occurs as **gwôok̄** in **gwôok̄ twôw̄ŋ** ‘Twong’s dog’, and as **gwôooŋ** in **gwôooŋ dwôw̄ŋ** ‘big dog’.

In the northeastern part of Sub-Saharan African, outside of the Nilotic language family, a construct form of nouns has been identified in the Cushitic language Iraqw (Mous 1993), and in the Omotic language Sheko (Hellenthal 2010).

The construct form of Sheko nouns is marked by a tonal alternation, a situation relatively common in Sub-Saharan Africa. This tonal change affects nouns modified by a numeral, a relative clause, a noun in adpossessive function, or a possessive prefix (Hellenthal 2010: 252).

3.3.1.2. Construct forms of nouns in Bantu languages

In Tswana (Bantu), the nouns whose basic tonal contour ends with two successive H tones (which constitute an important proportion of Tswana nouns, perhaps the majority) show a tonal alternation ...HH ~ ...HL that must be recognized as morphological, since its

conditioning cannot be stated in purely phonological terms. In this alternation, the variant ending with ...HL must be analyzed as a construct form. Interestingly, Tswana shows that the use of a construct form of the head noun and of an adnominalizer introducing the modifier may combine in the same construction.

For example, in (2a), **sìtswáná** ‘Tswana culture, language, etc.’ is the head of the NP **sìtswánà** ‘the Tswana they speak > the way they speak Tswana’, and consequently, the contact with the relative clause **sé básìbúàǀ** triggers the use of the construct form **sìtswánà**. In (2b), **sìtswáná** is also in contact with a relative clause (**sé básìrékìlèǀ**) but this relative clause modifies **sìtílò** ‘chair’,¹ not **sìtswáná**; in (2b), **sìtswáná** has no dependent, and consequently the construct form **sìtswánà** would not be correct.

(2) Tswana (Bantu – pers.doc.)

(2a) **ǀà-kí-rátí** **sì-tswánà** **s-é** **bá-sì-búà:-ǀ**
 NEG-1SG-like CL7-Tswana.CS CL7-ADNZ CL2-CL7-speak-REL
 ‘I do not like the Tswana they speak (the way they speak Tswana).’

(2b) **ǀà-kí-rátí** **sì-tílò** **s-á-sì-tswáná**
 NEG-1SG-like CL7-chair.CS CL7-GEN-CL7-Tswana

ǀs-é **bá-sì-rékìlè:-ǀ**
 CL7-ADNZ CL2-CL7-buy.PRF-REL
 ‘I do not like the Tswana chair they bought.’

In Tswana, nouns with a basic tonal contour ending with ...HH must take the construct form characterized by the contour ...HL when immediately preceding one of the following types of dependents:

- a demonstrative,
- a noun phrase in adpossession function,
- an adjective or a relative clause introduced by an adnominalizer homonymous with the demonstrative (and historically cognate with it),
- the interrogative determiner **-ǀ**,
- the negative determiner **-pé**,
- the determiner **-sìlí** ‘other’,

In his analysis of relativization in Eton (Bantu), Van de Velde (2017) argues that, in this language, the so-called “augment” (a nominal prefix whose original function was admittedly the expression of definiteness distinctions) has only subsisted as an obligatory element of the ‘noun + relative clause’ construction, and consequently fulfills a purely syntactic function of construct marker in the present state of the language.

This situation is interesting to compare to that described by Jenks, Makasso and Hyman (2017) for Basaá. In both languages, a prefix **í-** analyzable as the reflex of the Bantu augment is found with nouns modified by a relative clause. However, according to Jenks, Makasso and

¹ The construct form **sìtílò** is licensed by the adpossessor **sásìtswáná**.

Hyman's description, contrary to Eton, this prefix is not obligatory in Basaá, and it encodes definiteness distinctions. Consequently, Basaá and Eton can be analyzed as illustrating successive stages in the same grammaticalization process, with some interesting typological particularities:

- In Basaá, according to Jenks, Makasso and Hyman, the use of the augment to express definiteness distinctions has been restricted to nouns modified by a relative clause. Typologically, definiteness distinctions conditioned by the presence of a given type of noun modifier are not unknown, but this constitutes a somewhat unusual phenomenon (in Baltic and Slavic languages, which are the best-known cases of languages illustrating this kind of situation, the conditioning factor is rather the presence of an adjective).
- As regards Van de Velde's analysis of Eton, head marking (or in other words, the use of a construct form of nouns) in the 'noun + relative clause' construction is rarely if ever mentioned in the literature: quite obviously, construct forms of nouns (i.e., noun forms signaling that the noun combines with a given type of modifier) are more typically found with nouns heading adpossession construction.

3.3.1.3. Construct forms of nouns in Chadic languages

Hausa (Chadic) has a construct form of nouns characterized by a suffix **-n** (singular masculine or plural) or **-ŕ** (singular feminine), commonly called a 'genitive linker'. This suffix occurs when the noun is the head of adpossession construction, as in (3a) and (3c). It must also be used when the noun takes a possessive suffix other than first-person singular, see (3e) and (3f). It results from the cliticization of a pronoun **na/ta** resuming the head noun in the synonymous construction illustrated by (3b) and (3d).

(3) Hausa (Chadic – pers.doc.)

(3a) **kàre-n** **Daudà** (cf. **kàree** 'dog')
 dog-CS.SG.M Dauda
 'Dauda's dog'

(3b) **kàree na** **Daudà**
 dog that_of.SG.M Dauda
 'Dauda's dog'

(3c) **saanìya-ŕ** **Daudà** (cf. **saanìyaa** 'cow')
 cow-CS.SG.F Dauda
 'Dauda's cow'

(3d) **saanìyaa ta** **Daudà**
 cow that_of.SG.F Dauda
 'Dauda's cow'

(3e) **kàre-n-sà**
 dog-CS.SG.M-3SG.M
 ‘his dog’

(3f) **saaniya-ĩ-sà**
 cow-CS.SG.F-3SG.M
 ‘his cow’

In Hausa, the same suffix **-n** ~ **-ĩ** is found with attributive adjectives preceding nouns in the construction illustrated by **fari-n kàree** ‘white dog’ or **fara-ĩ saaniyaa** ‘white cow’ (**fari** and **fara** are the masculine and feminine forms, respectively, of the adjective ‘white’). See Creissels (2009) for a discussion of the possible analyses of this situation.

A construct form of nouns is also found in Wandala. According to Frajzyngier (2013), in the adpossession construction of Wandala, ‘non-relational’ head nouns take an obligatory ‘pertensive’ suffix **-á**. The distribution of the form of Wandala nouns marked by this suffix is similar to that of Semitic construct forms, since it must be followed either by an NP in the role of adnominal possessor, or by a person marker referring to a possessor.

3.3.1.4. The construct form of Yoruba nouns

In Yoruba (Western Benue-Congo), nouns have a special form used when they are followed by a noun in adpossession function beginning with a consonant, or by an enclitic possessive pronoun. This form is marked by the suffixation of a copy of the last vowel, which consequently meets the definition of construct form marker. This vowel copy acting as a construct form marker invariably has a mid tone if it is followed by a noun in adpossession function (as in **filà-ā Túndé** [hat-CS Tunde] ‘Tunde’s cap’, **ōmō-ō Táíwò** [child-CS Taiwo] ‘Taiwo’s child’, **ilé-ē Bísí** [house-CS Bisi] ‘Bisi’s house’), whereas with enclitic possessive pronouns, its tone is low in the 1SG and 2SG (as in **ōmō-ò mī** [child-CS 1SG] ‘my child’), mid in the other persons (as in **ilé-ē wá** [house-CS 1PL] ‘our house’) – Rowlands 1969: 45-46.

3.3.1.5. The construct form of Wolof nouns

In Wolof (Atlantic), a construct form of nouns characterized by the suffix **-u** (sg.) / **-i** (pl.) is used exclusively for nouns followed by an adnominal possessor. It occurs with no other type of dependent, and, contrary to Semitic construct forms, it does not occur with possessive affixes or determiners either.

The construct form of Wolof nouns shares with Semitic construct forms a constraint of strict contiguity with the dependent noun: other dependents of the head noun in the construct form must follow the possessor, and if the possessor itself has dependents that must precede it, they must be placed to the left of the head noun, as illustrated by (4).

(4) Wolof (Atlantic – pers.doc.)

(4a) **fas w-u ñuul**
horse CLw-ADNZ be_black
'black horse'

(4d) **suma nijaay**
1SG maternal_uncle
'my uncle'

(4c)

suma	fas-u	nijaay	w-u	ñuul
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1SG horse-CS maternal_uncle CLw-ADNZ be_black
'the black horse of my uncle' (lit. 'my horse of uncle black')

(4d) ***fas-u suma nijaay**
horse-CS 1SG maternal_uncle

3.3.1.6. Construct forms of nouns in Mande languages

In Mende (South Western Mande), the initial of nouns shows a consonant alternation triggered by the syntactic status of the noun. One of the two forms can be characterized as a construct form, since it is automatically used whenever the noun is immediately preceded by a dependent, whereas the other (the free form) occurs whenever the noun is the first element of an NP, or is not accompanied by any dependent, as illustrated by (5).

(5) Mende (Mande – pers.doc.)

(5a) **ndopô** 'child', **tokó** 'arm', **ngíla** 'dog' (free forms)

(5b) **ndopó-i loko-í**
child-D CS.arm-D
'the child's arm'

(5c) **ndopó-i yile-í**
child-D CS.dog-D
'the child's dog'

Most accounts of Mende morphology suggest describing the initial of the construct form in terms of 'lenition' of the initial of the free form, but as shown in Creissels (1994: 152–168), the construct form must rather be characterized as lacking an underlying nasal present at the initial of the free form. In Mende, a nasal with exactly the same morphophonological properties but prefixed to verbs is the manifestation of a third-person object pronoun, and comparison with Kpelle shows that, before being reanalyzed as the mark of the free form of nouns, the nasal prefixed to nouns was a definite article.

However, this is only part of the story. The construct form of Mende nouns is also marked tonally: as can be seen in (5), Mende nouns used as heads in adpossession construction, in

addition to a change in their initial consonant, show a uniform L tonal contour, regardless of the lexical tone they show in their free form. Interestingly, the historical processes that led to a segmental marking of the construct form of Mende nouns must be relatively recent (since they are easy to reconstitute by comparing Mende with the other South Western Mande languages) whereas the existence of tonally-marked construct forms of nouns must be very ancient in the Mande language family. Construct forms of nouns marked by an L or LH replacive morphotoneme are found in the two major branches of the Mande family (see among others Creissels (2016) on Soninke (West Mande), Khachaturyan (2015: 53) on Mano (South Mande)),² and a tonally marked construct form of nouns can safely be reconstructed at Proto-Mande level.

3.3.1.7. Construct forms of nouns in Dogon languages

A major typological feature of Dogon languages (Heath 2008; McPherson 2013) is the complexity of the tonal alternations affecting nouns and triggered by the presence of various types of modifiers. For example, in Tommo So, alienably possessed nouns have a L tonal overlay replacing their lexical tones – Ex. (6).

(6) Tommo So (Dogon – McPherson 2013: 183-4)

(6a) **gìnè** ‘house’, **isè** ‘dog’ (free forms)

(6b) **Sáná gìnè**
 Sana house^L
 ‘Sana’s house’

(6c) **Àrámátá isè**
 Ramata dog^L
 ‘Ramata’s dog’

3.3.2. Construct forms in the languages of the Americas

3.3.2.1. Nahuatl

In Classical Nahuatl (Uto-Aztecan), nominal inflection includes a paradigm of person prefixes encoding the person of a possessor, and these person prefixes attach to a special stem formed by substituting the ‘possessive’ suffix **-uh** (sg.) / **-huān** (pl.) for the ‘absolute’ suffix of the free form, as in (7b). Moreover, as illustrated in (7c), in the adpossessive construction, the head noun must take the same suffix, and the modifier is obligatorily cross-referenced by a possessive prefix. According to the definition adopted here, the suffix **-uh** (sg.) / **-huān** (pl.) is therefore a construct form marker.

² Following the Russian terminological tradition, Khachaturyan calls this construct form ‘izafet’. This is etymologically correct, since *‘idāfah* is the term used in Arabic grammars for the adpossessive construction in which the head noun occurs in the construct form. However, this can be misleading, since for most general linguists, this term rather evokes adnominalizers of the kind found in West Iranian languages and called *ezāfe* in Iranian linguistics – cf. section 3.2.2.

(7) Classical Nahuatl (Launey 1981: 90-92)

(7a) **cihuā-tl** ‘woman, wife’ (free form)

(7b) **no-cihuā-uh**
1SG-wife-CS.SG
‘my wife’

(7c) **in ī-cihuā-uh Pedro**
D 3SG-wife-CS.SG Pedro
‘Pedro’s wife’

3.3.2.2. Athabaskan languages

In Slave and other Athabaskan languages, nouns divide into two subclasses. The ‘inalienably possessed nouns’ imply the overt expression of a possessor (either as a possessive prefix, or as noun phrase preceding the possessee). With such nouns, the only way to avoid mentioning a specific possessor is the use of an ‘unspecified possessor’ prefix such as Slave **’e-** in **’e-ghú** ‘a tooth’ (Rice 1989: 118), to be compared with **se-ghú** ‘my tooth’ (Rice 1989: 119), where **se-** is the 1st person singular possessive prefix. By contrast, ‘alienably possessed nouns’ do not require the expression of a possessor, and in combination with possessive prefixes or noun phrases in the role of adnominal possessor, they obligatorily take a suffix traditionally called ‘possessed noun suffix’, which in the terminology used in this paper is a construct form marker.

(8) Slave (Rice 1989: 39).

(8a) **ts’ah** ‘hat’ (free form)

(8b) **se-ts’ár-é**
1SG-hat-CS
‘my hat’

(9) Dënesųłiné (Saxon & Wilhelm 2016: 38)

(9a) **bes** ‘knife’ (free form)

(9b) **John be-bes-é**
John 3-knife-CS
‘John’s knife’

According to Saxon & Wilhelm (2016), in addition to its use in the alienable possession construction, the construct form of Dënesųłiné and Tłıchq̓ is also used when nouns denoting a unit of measurement combine with a numeral to form a measure phrase, and when nouns are

preceded by a “characterizing” relative clause, in which the verb takes a nominalizing suffix, as in (10).

(10) T̥hçq̣ (Saxon & Wilhelm 2016: 42)

behçq̣ k'èdì-ɪ d̥q̣-ò
 vehicle drive-NMLZ person-CS
 ‘driver’, lit. ‘vehicle-driving person’

3.3.2.3. Amazonian languages

In his typological overview of noun phrase structure, Dixon (2010) quotes data from M̃yky (isolate, Brazil – Monserrat 2010: 162-3) and Hixkaryana (Carib – Derbyshire 1979: 68-70, 1985: 199-200) showing that these languages have forms meeting the definition of construct form adopted here.

Overall (2007) discusses the possibility of analyzing the adpossession construction of Aguaruna (Jivaroan) as involving a construct form marker (‘pertensive’ in his terminology) distinct from the suffixes encoding the person of the possessor.

3.3.3. *Construct forms in the languages of Eurasia*

3.3.3.1. Russian (and other Slavic languages)

In Russian, in noun phrases including a numeral and fulfilling a syntactic role requiring nominative or accusative case, the head noun takes a special form (sometimes misleadingly called ‘paucal’, cf. Paperno 2012), which never occurs in nominative or accusative noun phrases that do not include a numeral, and consequently meets the definition of construct form. There are two such forms, one of them is selected by numerals that end in 2, 3 or 4, the other by numerals ending in bigger simple numerals. The former usually coincides with the genitive singular, and the latter with the genitive plural, but some nouns show a contrast, for example **rjad** ‘row’, gen.sing. **rjáda**, occurs as **rjadá** in combination with numerals ending in 2, 3 and 4, and **čelovék** ‘person’, gen.pl. **ljuděj**, occurs as **čelovék** (identical to the nom. sing.) in combination with numerals ending in bigger simple numerals.

Among the other Slavic languages, the situation of Bulgarian is particularly straightforward, since due to the drastic simplification of nominal inflection, there is no possible confusion between the construct form of nouns required after numerals (as in **dva stol-a** [two chair-CS] ‘two chairs’) and other inflected forms of nouns.

3.3.3.2. Hungarian

Recent accounts of Hungarian morphology (among others É. Kiss & al. 2003) agree that the formation of the possessed form of Hungarian nouns, traditionally described as involving stem allomorphy triggered by the addition of possessive suffixes, is better analyzed as involving complex endings consisting of three successive morphemes:

- a ‘general possessive marker’ (*általános birtokviszonyjel*) with two allomorphs depending on the context: **-(j)a/e** and **-Ø**,
- a number marker with the two possible values **-Ø** (singular) and **-i** (plural), with a plural marker **-i** different from the plural marker **-k** found in non-possessed nominal forms,
- a person marker expressing the person of the possessor, which has a zero form for the 3rd person singular, as illustrated in (11).

Moreover, the ‘general possessive marker’ meets the definition of construct form marker, since it is obligatory in the presence of a noun phrase in adpossessionive function – cf. (12).

(11) Hungarian (Creissels 2006)

kocsi-ja-i-m	car-CS-PL.CS-1SG	‘my cars’
kocsi-ja-i-d	car-CS-PL.CS-2SG	‘your (sg.) cars’
kocsi-ja-i	car-CS-PL.CS(3SG)	‘his/her cars’
kocsi-ja-i-nk	car-CS-PL.CS-1PL	‘our cars’
kocsi-ja-i-tok	car-CS-PL.CS-2PL	‘your (pl.) cars’
kocsi-ja-i-k	car-CS-PL.CS-3PL	‘their cars’

(12) Hungarian (Creissels 2006)

a vendég-ek kocsi-ja-i	
D	guest-PL car-CS-PL.CS
‘the cars of the guests’	

This system is however somewhat blurred by the existence of a zero allomorph of the construct form marker, the zero marking of 3SG in the paradigm of the person markers referring to possessors, and the rule according to which, if no noun phrase in adpossessionive role is present, a noun form with construct marking but no overt person marker is interpreted as referring to a third person possessor. See Creissels (2006) for a more detailed presentation of the data, and a discussion.

3.3.3.3. Turkish (and other Turkic languages)

Turkish nouns are commonly described as having a possessive inflection with a paradigm of possessive suffixes including a 3rd person possessive suffix **-(s)I**. The status of this suffix is however problematic since, in contrast to the 1st and 2nd person possessive suffixes, it does not always implies reference to a possessor. The interpretation of constructions involving this suffix depends on the presence of a modifying noun in the nominative or genitive case:

- if no modifying noun in the nominative or genitive case is present, **-(s)I** implies reference to a possessor whose identity must be retrieved from the context;
- if a modifying noun in the genitive case is present, this noun is interpreted as referring to a possessor;

- if a modifying noun in the nominative case is present, this noun is interpreted as having generic reference, and the construction is interpreted as a binominal in which the modifier in the nominative case restricts the meaning of the head noun.

(13) Turkish (pers.doc.)

(13a) **müdür** ‘manager’ (free form)

(13b) **müdür-ü**
 manager-(s)I
 ‘its manager’

(13c) **banka-nın müdür-ü**
 bank-GEN manager-(s)I
 ‘the manager of the bank’

(13d) **banka müdür-ü**
 bank manager-(s)I
 ‘bank manager’

In the literature on Turkish, there is controversy between supporters of the view that **-(s)I** is the 3rd person possessive suffix in all of its uses, and supporters of a distinction between two homonymous suffixes, the possessive suffix and a ‘compound marker’ or ‘linking element’. None of these two analyses is really satisfying, and my claim is that **-(s)I** is best analyzed as a construct form marker licensing modification by a noun in the nominative or genitive case, with the default interpretation ‘3rd person possessive’ when no modifying noun is present (which can be analyzed as an anaphoric zero, depending on the theoretical framework).

An essentially similar analysis has been proposed by Kunduracı (2013), who doesn’t refer to the notion of construct marking, but argues that Turkish **-sI** is not a person marker. According to her analysis, the 3rd person marker in possessive constructions is zero, and she explicitly claims that **-sI** is functionally similar to ‘possessed noun markers’ found in Amerindian languages that meet the definition of construct marker put forward in the present article (in particular, the Athabaskan construct markers, cf. section 3.3.2.2). The reader is referred to her paper for a detailed discussion of properties of **-sI** that distinguish it from the possessive markers of 1st and 2nd person, and consequently contradict its identification as a 3rd person marker, even in constructions in which its presence implies reference to a 3rd person possessor.

3.3.3.4. Karbi

According to Konnerth (2014: 200), Karbi (Tibeto-Burman) has a nominal prefix **a-** she calls ‘general possessive’ or ‘modified’ prefix, which occurs on nouns that are modified by pre-head elements (but not if modified by post-head elements). This suffix “occurs on a head noun if that head noun is modified by a pre-head demonstrative, content question word, possessor noun, or adverbial, by a pre-head deverbal modifier, or by a pre-head classifier or numeral.” Interestingly, the same **a-** prefix can also be found in constructions in which none of the pre-head modifiers that

trigger its use is present, in which case it is interpreted as marking third person possession. This might well be its original function, since it seems to be the reflex of a Proto-Tibeto-Burman prefix *ʔa- / *(ʔ)ə / *ʔə / *ʔaŋ / *ʔak reconstructed by Matisoff (2003: 104) with a range of functions including third person possessive.

3.3.4. *Construct forms in the languages of Australia and the Pacifics*

3.3.4.1. Oceanic languages

The use of the term ‘construct’ for a morphological mechanism meeting the definition retained here for this term is common in descriptions of Oceanic languages:

“In Micronesian and eastern Melanesian languages, the possessed NP is marked with what is generally referred to as the ‘construct’ suffix, or some other linking morpheme. The construct suffix sometimes coincides in shape with the third person singular pronominal suffix, but the two are frequently morphologically distinct.” (Lynch & al. 2001: 41)

Ex. (14) illustrates the construct form of nouns in Anejom.

(14) Anejom (Oceanic – Lynch & al. 2001: 41)

etma-k	etma-n	etma-i	natimarid
father-1SG	father-3SG	father-CS	chief
‘my father’	‘his/her father’	‘the chief’s father’	

Bril (2013) provides a detailed description of the morphological modification of head nouns in Nêlêmwa adnominal possession. Here is one of her examples:

(15) Nêlêmwa (Oceanic – Bril 2013: 76)

pwââdagax-a	jowo	ena
NMLZ:be_beautiful-CS	door_frame	that
‘the beauty of this door-frame’		

3.3.4.2. Martuthunira

According to Dench (2013), the Australian language Martuthunira has a rare ‘pertensive’ suffix meeting the definition of construct marker retained in this paper, since it “can be described as the obverse of the source suffix. Where the source suffix attaches to the Possessor and codes this as the parent of the Possessee head, the pertensive attaches to Possessee and codes this as the child of the Possessor head.”

3.4. Conclusion to section 3

Inflected forms of nouns meeting the definition of construct form put forward in this paper are found all around the world, in languages that have no close genetic or areal link. They show cross-linguistic variation with respect to the following parameters:

- the types of dependents that require the use of a construct form of their head;
- the possibility of using a construct form without any overt dependent;
- the possibility that construct marking interferes with the expression of some features of the head noun (number, gender);
- the possibility that the distinction between free form and construct form is restricted to a subset of nouns delimitable in either phonological or semantic terms;
- the morphological nature of construct form marking (prefixation, suffixation, or other).

The languages in the sample give an idea of the possible variations in the syntactic distribution of construct forms. However, in the languages that have a single construct form, its distribution almost always includes the role of head in adpossession construction, and in the languages that have two or more distinct construct forms, one of them is used in the adpossession construction. Among the languages quoted in this paper, the only exceptions are Eton (where construct marking is only used to license modification by relative clauses) and Slavic languages (where construct marking is only used to license modification by numerals).

As regards the possible interaction between construct marking and the expression of features of the noun marked as construct, some languages in the sample have construct markers that are portmanteau morphs expressing also number and/or gender: Hausa, Wolof, Nahuatl.

As regards the morphological nature of construct form marking, the addition of an affix (either a prefix or a suffix) to the free form is common, but construct form marking may also involve the deletion of a morphological element present in the free form, as in Mende, the replacement of a morphological element present in the free form by the construct marker (Nahuatl), or stem-internal alternations, including prosodic alternations (Mande languages, Dogon languages, Konso, Tswana).

In the languages that have a construct form used in adpossession construction, it variously interferes with possessor indexation. In Semitic languages, person markers representing pronominal possessors are in complementary distribution with possessor NPs, and the construct form is used both with nominal and pronominal possessors. In Wolof, the construct form is used exclusively with nominal possessors. In Nahuatl, construct marking obligatorily combines with possessor indexation. In Hungarian, Turkish, and Karbi, third person possession is the default interpretation of a construct form in the absence of any overt indication of a possessor.

Diachronically, not all the construct forms illustrated in this paper are historically transparent. For example, in Semitic linguistics, there is controversy about the possible origin of the Ge'ez construct marker **-a** and its possible relationship with the accusative marker **-a**. The illustrations provided in the previous sections nevertheless suggest a variety of scenarios that may result in the emergence of a construct form of nouns:

- construct marking may result from the morphologization of prosody-driven phonological processes, as proposed for Hebrew by Borer (2008: 492);
- construct marking may result from the morphologization of sandhi processes, either segmental (as in Semitic languages) or tonal (as in Tswana);
- in Mende, the construct form of nouns is marked by the absence of a prefix present in the free form that diachronically can be characterized as a frozen definite article, whereas in Eton, it is the construct form of nouns that is marked by a prefix analyzable as a frozen definite article;
- in Hausa, the construct form of nouns is marked by a suffix resulting from the encliticization of a resumptive pronoun in an adnominal possession construction whose literal equivalent in English would be something like ‘the dog that.of the man’ for ‘the man’s dog’;
- the construct marker of Karbi seems to result from the reanalysis of a third person possessive, and this is also the probable origin of the construct markers of Hungarian and Turkish.

It is also worth noting that there seems to be no correlation between the relative order of nouns and their modifiers and the use of construct marking, since among the languages of the sample, construct forms are equally attested in *noun – modifier* and *modifier – noun* constructions.

4. Construct marking in the formation of binominals

Languages may have more or less productive patterns of binominal formation formally similar to their adpossessive construction, and this applies in particular to languages whose adpossessive construction involves construct marking.

4.1. Languages in which construct marking is not used productively for the formation of binominals

In some of the languages that make use of construct marking in adpossessive construction, the construct marking is not used productively in the formation of binominals.

This situation can be illustrated by Soninke (Mande). The adpossessive construction of Soninke follows the order *possessor – possessee* and involves no segmental marking, but a tonal modification of the possessee that must be analyzed as construct marking. The construct form of Soninke nouns is marked by a low-high tone pattern (with high tone on the last syllable only) replacing the lexical tone pattern of the noun. For example, the construct form of **kíttè** ‘hand’ is **kítté**. In the adpossessive construction, the possessor undergoes no modification at all, either segmental or tonal.

Soninke also has a very productive pattern of binominal formation in which two nouns are juxtaposed in the order *modifier – head*, but as illustrated in (16), no ambiguity with adpossessive construction can arise, since in this compounding pattern, it is the first noun (i.e., the modifier) that occurs in a special form (the ‘non-autonomous’ form), used exclusively when nominal lexemes occur as the first formative of complex lexemes.

(16) Soninke (Mande – pers.doc.)

(16a) **yúgò** ‘man’, **kittè** ‘hand’ (free forms)

(16b) **yúgò-n kittè**
 man-D hand.CS.D³
 ‘the hand of the man’

(16c) **yúgú-kittè**
 man.NAUT-hand.D⁴
 ‘man’s hand’

Hungarian provides another illustration of a language in which the construct form that characterizes nouns modified by an adnominal possessor is only exceptionally used in the formation of binominals. Hungarian has a very productive compounding pattern in which two nouns are simply juxtaposed in the order *modifier – head*, and precisely, as illustrated in (17), construct marking contributes to the distinction between such binominals and adpossessive constructions involving the same nouns.

(17) Hungarian (pers.doc.)

(17a) **a férfi cipő-je**
 D man shoe.CS
 ‘the shoe of the man’

(17b) **férfi-cipő**
 man-shoe
 ‘man’s shoe’

There is however in Hungarian a very limited set of binominals whose head exceptionally shows construct marking. For example, **tojás-héj** [egg-shell] ‘egg shell’ has the regular structure of a compound noun, whereas **tojás-fehér-je** [egg-white-CS] ‘egg white’ is among the compound nouns that exceptionally involve construct marking.

4.2. Productive use of construct marking in the formation of binominals

In many languages whose adpossessive construction involves construct marking of the head noun (the possessee), the same construct marking is more or less productively used in the formation of binominals, alongside with other possible formal types of binominals.

A first illustration of the productive use of construct marking in the formation of binominals has already been encountered above (section 3.3.3.3) with Turkish. Further illustrations are given in (18).

³ **kittè** can be decomposed as **kitté** + ` , where **kitté** is the construct form of ‘hand’, and the floating low tone is the manifestation of definiteness marking before a pause.

⁴ In Soninke, nouns are obligatorily quoted in the definite form (hence the low tone on the last syllable – cf. footnote 3)

(18) Turkish (pers.doc.)

para çanta-sı	[money bag-CS]	‘wallet’
köpek diş-i	[dog tooth-CS]	‘canine tooth’
baş örtü-sü	[head cover-CS]	‘kerchief’
diş fırça-sı	[tooth brush-CS]	‘tooth brush’

In Turkish, case-marking of the modifying noun distinguishes such binominals from adpossessionive construction, since nominative marking (or zero marking) of the modifying noun in the formation of binominals whose second formative is in the construct form contrasts with genitive marking of adpossessionors – cf. ex. (13) above.

In most languages that make more or less productive use of construct marking in the formation of binominals, there is no systematic morphological distinction between the modifying noun in such binominals and the possessor in adpossessionive construction. This is in particular the situation found in Semitic languages.

In such cases, the interpretation of a sequence $N_1 N_2$.CS or N_1 .CS N_2 as a binominal or an adpossessionive construction depends on the determination system of individual languages – more precisely, on the rules governing definiteness marking in adpossessionive construction and in the formation of binominals. For example, in Arabic binominals involving construct marking of the head noun, such as **sikkat l-hadīd** [road.CS D-iron] ‘railway’, the modifying noun is obligatorily marked as definite, whereas in adpossessionive construction, the possessor NP can be definite or indefinite. Hebrew also has binominals involving construct marking in which the modifying noun, although semantically generic, is obligatorily marked as definite, such as **beyt ha-yetomim** [house.CS D-orphan.PL] ‘orphanage’ or **ben ha-melex** [son.CS D-king] ‘prince’, but this is not the general rule in Hebrew, cf. **beyt sefer** [house.CS book] ‘school’ or **beyt xolim** [house.CS patient.PL] ‘hospital’ (Borer 2008).

Example (19) provides further illustrations of binominals involving construct marking in Dënesųhné (Athabaskan).

(19) Dënesųhné (Saxon & Wilhelm 2016: 60-64)

dechën-tu-é	[wood-water-CS]	‘sap’
k’es-léz-é	[tree/poplar-dust-CS]	‘ashes’
la-yú-é	[hand-clothing/equipment-CS]	‘tool’

Like any other formal type of binominals, binominals involving construct marking may develop non-compositional meanings, as illustrated by Hebrew **melaxex pinka** [chewer.CS bowl] ‘toady, sycophant’, lit. ‘bowl-chewer’ (Borer 2008). Example (20) illustrates semantically more or less opaque binominals involving construct marking in Wolof (Atlantic).

(20) Wolof (Atlantic – pers.doc.)

doom-u jàngoro	[child-CS illness]	‘microbe’
doom-u xaj	[child-CS dog]	‘bastard’

doom-u tubaab [child-CS European] ‘doll’

4.3. Patterns of binominal formation historically related to construct marking

In the evolution of languages, changes in the shaping of adpossessive construction are not uncommon. In particular, languages whose adpossessive construction involves construct marking of the possessee may develop an alternative construction with unmarked possessee. For example, the adpossessive construction of Semitic can be reconstructed as involving construct marking of the possessee, but the development of adpossessive constructions with unmarked possessee and prepositional marking of the possessor is pervasive across Semitic languages, cf. for example Fabri (1996) on Maltese, Ech-Charfi (2014) on Moroccan Arabic.

In languages in which construct marking is also productively used in binominal formation, a possible scenario is that the development of an alternative adpossessive construction affects the productivity of construct marking as a way of coding the possessor in adpossessive construction without affecting its productivity in binominal formation.

Amharic (Ethiosemitic) illustrates a variant of this scenario, involving also language contact, which has led to a situation in which a marker that was initially productively used as a construct marker in adpossessive construction subsists only in binominal formation.

In the adpossessive construction of Amharic, the Semitic *possessee.CS possessor* pattern has been completely replaced by the *GEN-possessor possessee* pattern, as in **yä-ləj-u däbtär** [GEN-boy-D notebook] ‘the boy’s notebook’. However, Amharic has a relatively productive pattern of binominal formation N1-ä N2 historically related to the Semitic *possessee.CS possessor* pattern of adpossessive construction. This pattern is particularly productive with **bet** ‘house’ or **bal** ‘master, husband’ as the first formative.

(21) Amharic (Ethiosemitic – Kozicki 2017, Leslau 2005)

bet-ä mängäst	[house-ä kingdom]	‘palace, parliament’
bet-ä mädhānit	[house-ä medicine]	‘pharmacy’
bet-ä krəstiyan	[house-ä Christian]	‘church’
bal-ä suq	[master-ä shop]	‘shopkeeper’
bal-ä qəne	[master-ä hymn]	‘poet’

Historically, the -ä involved in the formation of such compounds is the construct marker of Ge’ez, a now extinct Ethiosemitic language closely related to the ancestor of present-day Amharic (cf. section 3.1). Ge’ez was the official language of the Kingdom of Aksum and Ethiopian imperial court and still is the liturgic language of the Ethiopian Church, and as such exerted considerable influence on Amharic.

5. Conclusion

In this paper, after defining construct marking as a particular technique of marking relationships between head nouns and their dependents, I have first shown that noun modifying constructions involving construct marking in the sense of the definition I propose can be found well beyond the language families in which the term of ‘construct’ is traditionally used, and I have illustrated the cross-linguistic variation in construct marking.

As regards the relationship with binominal formation, in the languages that make use of construct marking in their adpossession construction, it is common (although not universal) that construct markers are also used more or less productively in the formation of binominals, resulting in potential ambiguity in the interpretation of $N_1.CS N_2$ or $N_1 N_2.CS$ sequences. In Turkish, any ambiguity is avoided by the contrast between genitive marking of the possessor in adpossession construction and nominative/zero marking of the modifying noun in binominal formation, but this kind of strategy is not common cross-linguistically. Most of the time, the distinction between adpossession construction and binominals whose formation involves construct marking entirely relies on the use of determiners, which means that the possibility of sequences ambiguous between these two types of interpretation depends on the details of the determination system of individual languages.

Historically, a possible evolution is that, due to changes affecting the expression of adnominal possession, a construct marker also used in the formation of binominals loses its productivity in adnominal possession while remaining productive in binominal formation, with the possible outcome that a former construct marker subsists only as a kind of linking element between the two formatives of binominal lexemes, as attested in Amharic.

Abbreviations

ADNZ: adnominalizer, CL: noun class, CS: construct marker, D: definite, F: feminine, GEN: genitive, H: high (tone), L: low (tone), M: masculine, NAUT: non-autonomous form of nouns, NEG: negation, NMLZ: nominalizer, PL: plural, PRF: perfect, REL: relativizer, SG: singular

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