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Explaining alienability splits in the use of overt and zero possessive marking: a source-oriented approach

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Abstract: A well-known pattern in the encoding of adnominal possession crosslinguistically involves splits in the use of overt and zero marking for alienable and inalienable possession. Overt marking may be restricted to alienable possession, but it is not usually restricted to inalienable possession. Zero marking may be restricted to inalienable possession, but it is not usually restricted to alienable possession. This has been explained in terms of principles pertaining to general properties of alienable and inalienable possession, such as the relative degree of conceptual contiguity between possessor and possessee or the relative need to disambiguate the possessive relation. These principles, however, have generally been formulated based on the synchronic crosslinguistic distribution of overt and zero marking across alienable and inalienable possession, rather than diachronic phenomena that shape this distribution from one language to another over time. This paper discusses several developmental processes that have been shown to recurrently give rise to the possessive markers involved in the alienability splits in question crosslinguistically. These markers develop through metonymization processes whereby various types of pre-existing elements take on a possessive meaning originally associated with their context of occurrence, independently of alienability. The distribution of these markers across alienable and inalienable possession follows from restrictions in the distribution of the source construction, unrelated to possession. Principles pertaining to alienability may possibly play a role in the extension, retention or loss of particular markers across alienable and inalienable possession contexts once they are in place in a language, thus ultimately contributing to the relative crosslinguistic frequency of particular alienability splits. This, however, remains to be investigated. These facts call for a new, source-oriented approach to alienability splits and recurrent crosslinguistic patterns in general. In this approach, individual patterns and their relative crosslinguistic frequency are explained in terms of the properties

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of multiple source constructions and diachronic phenomena that give rise to the pattern and shape its crosslinguistic distribution over time, rather than particular synchronic properties of the pattern in themselves.

Keywords: alienability splits; diachrony; overt marking; typology; zero marking

1 Introduction

A well-known pattern in the encoding of adnominal possession crosslinguistically involves splits in the use of overt and zero marking for alienable and inalienable possession. The notions of alienable and inalienable possession are used here, in a maximally general sense, to refer to a semantic opposition between non-inherent and inherent possessive relations between two entities (e.g., 'John's house', 'John's books' vs. 'John's mother', 'John's hand', or 'the branch of the tree'), independently of how these relations are encoded in particular languages.[1] While these two relation types can be treated in the same way in terms of overt and zero marking (both overtly marked, both zero marked, or both overtly or zero marked in different cases), languages also recurrently display splits where overt marking is restricted to alienable possession, or zero marking is restricted to inalienable possession.[2]

Some of these patterns are illustrated in (1) and (2) below. In the Imonda construction in (1), both alienable possession ('father's house') and inalienable possession ('my father') are encoded by the possessive marker *-na*.

1 These notions are also often used in the literature not only in a semantic sense, but also in a structural sense, that is, to identify particular constructions that encode relations of alienable or inalienable possession in individual languages. Sometimes, there is an assumption that the use of these constructions is determined by some semantic notion of alienability that is psychologically relevant for speakers. In other cases, the relevant constructions are described in terms of alienable or inalienable possession because they encode at least some types of alienable or inalienable possession, regardless of whether this reflects some psychologically relevant notion of alienability. This approach to alienability is not directly relevant to the arguments developed in this paper, but the reader is referred to Chappell and McGregor (1989), Chappell and McGregor (1996), Heine (1997: Chap. 1), and Nichols (1988) for detailed discussion and exemplification.

2 By overt marking is meant here any overt form that may be used in a language to encode a possessive relation between two entities. This definition includes both forms that encode the possessive relation only (possessive markers proper, such as adpositions, case marking or possessive classifiers), and forms that also encode the possessor or the possessee (e.g., possessive pronominal forms or the construct state of the noun in Afro-Asiatic languages). The latter forms, however, are usually not taken into account in the literature on alienability splits, and will not be discussed here.

(1) *ka-**na*** *aia-l-**na*** *ièf*
1-POSS father-NOMLZ-POSS house
'the house of my father'
(Seiler 1985: 63) (Imonda, Border)

In the Manam constructions in (2), on the other hand, alienable possession ('the chief's garden') is encoded by the possessive marker *-?aná*, whereas inalienable possession ('their father') is zero marked.

(2) a. *tanépwa úma **?aná**-na-lo*
chief garden POSS-BF-in
'in the chief's garden'
b. *táma-di*
father-3PL.ADN
'their father'
(Lichtenberk 1983: 310) (Manam, Oceanic)

Languages, however, do not usually display splits where overt marking is restricted to inalienable possession, or zero marking is restricted to alienable possession.

A classical and very influential explanation for this phenomenon, originally proposed by Haiman (1983, 1985), is in terms of iconicity. Relations of inalienable possession are determined by inherent properties of the possessee, and hence involve higher conceptual contiguity between possessor and possessee than relations of alienable possession. This will be iconically reflected by the relative linear distance between possessor and possessee in the constructions used to encode these two relation types, as well as by the relative degree of morhosyntactic complexity of these constructions. The use of overt marking will be avoided in inalienable possession constructions, both because overt markers are often placed between possessor and possessee, thus increasing the linear distance between the two (as in (1)), and because they increase the morphosyntactic bulk of the construction, even when they are not placed between possessor and possessee (as in (2a)).

Alternatively, the distribution of overt and zero marking across alienable and inalienable possession has been explained in terms of the relative need to disambiguate the possessive relation (Dahl and Koptjevskaja-Tamm 1998, 2001; Haspelmath 2008, 2017; Koptjevskaja-Tamm 1996; Nichols 1988). The semantics of inalienable nouns implies that their referents are in a specific relation with some other referent, so this relation does not need to be overtly specified, and can be zero marked. By contrast, the referents of alienable nouns need not be involved in a relation with other referents, so this relation is more difficult to identify and hence

more in need to be specified through overt marking. This explanation involves a principle of economy whereby speakers will use overt marking only when this is really necessary, that is, for meanings that are more in need of disambiguation.[3]

Both of these explanations imply that alienability splits are motivated by a functional match between the use of overt versus zero possessive marking and general properties of alienable and inalienable possession, either in the sense that this use matches the relative degree of conceptual contiguity between possessor and possessee, or in the sense that it matches the relative need to disambiguate the possessive relation. These matches favor overt marking in alienable possession contexts over inalienable possession ones, and zero marking in inalienable possession contexts over alienable possession ones.

These explanations, however, are generally based on the synchronic distribution of overt and zero marking across alienable and inalienable possession crosslinguistically, not diachronic phenomena that shape this distribution from one language to another over time (though some grammaticalization processes involved in the development of overt marking have been assumed to be triggered by the higher need to disambiguate the possessive relation: Dahl and Koptjevskaja-Tamm 1998; Heine 1997: Chap. 3; Koptjevskaja-Tamm 1996). In this paper, a number of crosslinguistic developmental processes will be discussed that have been shown to recurrently give rise to the possessive markers involved in the alienability splits in question, that is, splits where the use of possessive markers is restricted to alienable possession, or zero marking is restricted to inalienable possession. Such processes, it will be argued, provide no evidence that these splits reflect general properties of alienable and inalienable possession.

As will be shown in Section 2, data from grammaticalization studies and studies of possessive constructions in individual languages worldwide show that the relevant possessive markers are derived from elements originally used for other functions (attributive or appositive demonstratives, various types of appositive nouns, indefinite pronouns, locative elements). These elements evolve into possessive markers as they take on a possessive meaning originally associated with

3 In some of these accounts (Haspelmath 2008, 2017; Nichols 1988), the relation between the semantics of alienable and inalienable nouns and the use of overt and zero marking is mediated by the frequency of these nouns occurring in a possessive construction. Due to their semantics, inalienable nouns are typically used in possessive constructions, so they will usually be expected to be in a possessive relation with a co-occurring nominal, and this does not have to be overtly specified. Alienable nouns, on the other hand, do not typically occur in possessive constructions, so, if they are in a possessive relation with a co-occurring nominal, this is not expected and should be overtly specified.

their context of occurrence. This is basically a metonymization process triggered by the co-occurrence of the source element and the possessive meaning, independently of alienability.

The distribution of individual markers across alienable and inalienable possession is also plausibly a result of factors other than alienability, as will be shown in Section 3. The fact that particular markers are not used for inalienable possession ultimately reflects the distribution of the source construction, which is also not used in inalienable possession contexts, for reasons unrelated to possession. This is confirmed by the fact that, in several languages, possession is or is not overtly marked depending on factors that cut across alienability distinctions and are related to the distribution of the constructions that gave rise to the relevant possessive markers, such as the animacy of the possessor. In addition, possessive markers may develop in inalienable, rather than alienable possession contexts, which goes against the idea that the use of overt marking is favored in the latter contexts as opposed to the former. This phenomenon too can be explained in terms of the distribution of the source constructions that give rise to individual markers.

In this scenario, as will be discussed in Section 4, the attested differences in the crosslinguistic frequency of different alienability splits can be a possibly combined result of several distinct factors, which need not be related to alienability and whose role remains to be investigated. These include the relative crosslinguistic frequency of the source constructions or the developmental processes that can give to possessive markers in alienable and inalienable possession contexts, as well as how often existing possessive markers are extended, retained or lost across these contexts.

These facts, as will be argued in Section 5, call for a new, source-oriented approach to alienability splits and recurrent crosslinguistic patterns in general (as discussed, for example, in Cristofaro 2013, 2017, 2019). In this approach, individual patterns and their relative crosslinguistic frequency are explained in terms of the properties of several distinct source constructions and diachronic phenomena that can give rise to the pattern and shape its crosslinguistic distribution over time, rather than particular synchronic properties of the pattern in themselves.

2 On the diachronic origins of overt marking

If particular alienability splits reflect general properties of alienable and inalienable possession, as assumed in classical explanations, these properties should play a role in the diachronic phenomena responsible for the presence of these splits in individual languages, for example, phenomena that give rise to overt marking and shape its distribution across alienable and inalienable possession. In what follows, a

number of recurrent crosslinguistic developmental processes will be discussed that have been shown to give rise to the possessive markers involved in the alienability splits in question, that is, splits where overt marking is restricted to alienable possession, or zero marking is restricted to inalienable possession. These processes, it will be argued, provide no evidence that the relevant markers arise because of principles pertaining to properties of alienable and inalienable possession, such as the relative degree of conceptual contiguity between possessor and possessee, or the relative need to disambiguate the possessive relation.

2.1 Crosslinguistic developmental processes

Possessive markers are known to usually develop from elements originally used for other functions (see, for example, Heine 1997; Heine et al. 1991). This has been shown to also be the case for markers involved in splits where overt marking is restricted to alienable possession, or zero marking is restricted to inalienable possession. A recurrent source for such markers are elements that are originally part of a possessive construction, but do not encode a relation between possessor and possessee. Instead, these elements are used to refer to the possessee, or, in some cases, some other entity involved in the situation being described, and they take on the possessive meaning associated with the construction as a whole as their original meaning is bleached.

Sometimes, the source is a demonstrative element, that is, constructions of the type 'X *that/this* Y', where X and Y are a possessee and a possessor respectively, become 'the X *of* Y'. While the exact syntactic structure of the source construction cannot always be reconstructed for individual languages, it is generally assumed that the original function of the demonstrative is to single out the possessee, either by modifying it, e.g., 'that X (of) Y', '(of) Y, that X', or by denoting it in an appositive expression, that is, 'X, that (of) Y', 'that (of) Y, X' (see, for example, Eksell Harning 1980; Pennacchietti 1968 for Arabic and Semitic in general; Schuh 1983, 1990 for Chadic; Hoch 1997: 152 for Ancient Egyptian; and Yap et al. 2010 for Mandarin Chinese).

As illustrated in (3) and (4), for example, a number of Chadic languages display a pattern where possession is overtly marked for alienable nouns and some inalienable nouns ((3a), (4a)), and zero marked for other inalienable nouns ((3b), (4b); these nouns are sometimes quite limited in number). The possessive markers often agree in gender with the possessee, and are ultimately derived from demonstrative roots (Schuh 1977, 1983, 1990).

(3) a. *ăkŭ-**tk**-îi; mii-**tk**-ja*
goat-POSS.F.SG-2SG mother-POSS-1.PL.EXCL
'your goat; our mother' (cf. ***-tkŭ*** 'this')
(Schuh 1977: 72, 1990: 603)
b. *bâ-anăi*
co-wife-1SG
'my co-wife'
(Schuh 1977: 42) (Gashua Bade, West Chadic)

(4) a. *ɓili **ma** lowoi*
horn POSS.M.SG boy
"the boy's horn" (cf. ***me*** 'this')
b. *ɓil kimne; mɔ Miyim*
horn buffalo wife Miyim
'buffalo's horn; Miyim's wife'
(Schuh 1983: 183–184) (Kanakuru, West Chadic)

In Ancient Egyptian, pronominal possession is either zero marked or marked by the elements *pɜy/tɜy/nɜy*, which agree with the possessee in gender and number and are derived from the demonstrative forms *pɜ/tɜ/nɜ*. The use of these elements is strongly favored in alienable possession contexts such as the one in (5a), whereas inalienable possession contexts such as the one in (5b) strongly favor zero marking (Gardiner 2017; Kammerzell 2000).

(5) a. ***nɜy**=sn ḥkɜ-w*
POSS.PL=3PL sorcerer-M.PL
'their sorcerers'
(Gardiner 2017: 645)
b. *sn=j*
brother=1SG
'my brother'
(Gardiner 2017: 645) (Ancient Egyptian, Afro-Asiatic)

In Mandarin Chinese, the possessive marker *de* can be used for both alienable and inalienable possession. As illustrated by the contrast between (6a) and (6b), however, its use is disfavored by particular types of inalienable nouns, such as kin terms (Chappell and Thompson 1992; Li and Thompson 1981: 113–116; Shi and Li 2002). The marker is derived from the demonstrative element *di* illustrated in (6c) (Shi and Li 2002; Yap et al. 2010).

(6) a. *xuéxiào* ***de*** *jiào*
school POSS teach
'school's teaching staff'
(Li and Thompson 1981: 114)

b. *nǐ* *(de)* *mèimei*
2SG POSS younger.sister
'your younger sister'
(Li and Thompson 1981: 116)

c. ***Di*** *shi* *cang* *chun* *chu*
that be store spring place
'This is a warm and pleasant place.'
(*Mo shan xi ci*, c. AD 900)
(Shi and Li 2002: 8) (Mandarin Chinese, Sinitic)

In other cases, the source of the possessive marker is a noun in an appositive relation with the possessee, which is used to specify some semantic property of the latter. For example, constructions of the type 'X, *food/drink/tree/thing/property* Y', where X and Y are a possessee and a possessor respectively, become 'the X *of* Y'. This process has been found to be at the origin of the possessive classifiers attested in a number of Oceanic languages, as illustrated in (7)–(9) below (Lichtenberk 2018, among several others). The use of these classifiers is limited to alienable possession (see the cases of inalienable possession in (7e), (8b), and (9b), where no classifier is used), and individual classifiers generally occur in contexts directly related to the meaning of the source, so that different classifiers are used depending on whether the construction encodes general possession, possession of a food item, a drink item, a vegetable item, and so on, as can be seen from (7a)–(7d). Sometimes, for example, in (7d), the classifier is derived from the noun encoding the possessee, so that this noun is actually originally used in apposition to itself. The same noun may or may not take classifiers depending on whether the referent is alienably or inalienably possessed, as illustrated by the contrast between (8a) and (8b).

(7) a. ***ropi****-qi* *niu*
POSS.CLASS-1SG.POSS coconut
'my coconut for drinking' (cf. *ropi* 'drink')
(Ross 2001: 157)

b. ***uma****-qi* *uri* *eteba*
POSS.CLASS-1SG banana SG
'my banana plant' (cf. *uma* 'soil' from Proto-Oceanic * *quma* 'garden')
(Ross 2001: 157)

c. ***ane**-qi* *uri* *eteba*
POSS.CLASS-1SG banana SG
'my banana to eat' (cf. *ane* 'food')
(Ross 2001: 157)

d. ***ai**-qi* *ai*
POSS.CLASS-1SG tree
'my (tall) tree'
(possessive classifier derived from possessed noun, lit. 'my tree, the tree')
(Ross 2001: 157)

e. *tama-qi*
father-1SG
'my father'
(Ross 2001: 156) (Mussau, Oceanic)

(8) a. ***aɲi**-n* *jəə*
POSS.CLASS-3SG bone
'its bone' (dog playing with a bone, possessive classifier derived from noun meaning 'thing')
(Ozanne-Rivierre 1976: 159)

b. *jeie-n*
bone-3SG
'its bone' (anatomical)
(Ozanne-Rivierre 1976: 159) (Iaai, Oceanic)

(9) a. *ā* *mwà* ***tɛ**-n*
the house POSS.CLASS-his
'his house' (cf. *tɛ* 'property, goods')
(Moyse-Faurie and Ozanne-Rivierre 1983: 119)

b. *pūnī-n*
head-his
'his head'
(Moyse-Faurie and Ozanne-Rivierre 1983: 118) (Cèmuhî, Oceanic)

DeLancey (1986) assumes that a similar process gave led to the use of the marker *-gu* for alienable possession in Newari. This marker, he submits, is derived from an element meaning 'thing', so that the source construction was 'Y's thing, X'. The marker (usually described as a nominalizer) may or may not used with the

same nouns depending on whether they are alienably or inalienably possessed, as illustrated by the contrast between (10a) and (10b).[4]

(10) a. *ram-ya-**gu*** *tasbir*
Ram-GEN-NOMLZ picture
'Ram's picture'
(a picture belonging to Ram; originally, 'Ram's thing, a picture')
(DeLancey 1986: 6)
b. *ram-ya* *tasbir*
Ram-GEN picture
'a picture of Ram'
(DeLancey 1986: 7) (Newari, Tibeto-Burman)

In yet other cases, the possessive marker is derived from an indefinite form. This pattern has been described for languages where particular referents can be alienably or inalienably possessed, and overt marking is used in the former case but not in the latter (Thompson 1996; Young and Morgan 1980). In Navajo, for example, the construction in (11a) involves alienable possession, 'my milk (from the store)'. In this case, as can be seen from (11b), possession is encoded through a marker derived from the indefinite form *'a-*, so that the meaning of the construction is, literally, 'my something('s)/somebody('s) milk'. This reflects the fact that, in such cases, there actually are three entities involved, the possessor, the possessee, and the unknown source of the latter, which is encoded by the indefinite form (Young and Morgan 1980: 7). When the referent in question is inalienably possessed, as in (11c), 'my milk (from my breast)', on the other hand, the possessor and the source of the possessee overlap, and the marker is not used.

(11) a. *she-**'a**-be*
1SG-3INDEF-milk
'my milk' (from a secondary source, as milk purchased at the store)
(Young and Morgan 1980: 7)

4 In Newari, as can be seen from Example (10), both alienable and inalienable possession are marked by the genitive case affix, and alienable possession is further marked by *-gu*. Thus, the use of overt marking involves an alienability split in the sense that alienable possession is marked by more morphemes than inalienable possession, not in the sense that alienable possession is overtly marked whereas inalienable possession is zero marked. While alienability splits in the use of overt marking are usually defined in terms of an opposition between overt and zero marking, this pattern is in line with classical explanations of these splits in terms of iconicity and economy. If the use of overt marking is related to the lower conceptual contiguity between possessor and possessee, or the higher need to disambiguate the possessive relation, then it is to be expected that individual markers should be used for alienable, rather than inalienable possession, even when both possession types are overtly marked already (see on this point Croft 2003: Chap. 4).

b. ***'a**-be*
3INDEF-milk
'something's milk'
(Young and Morgan 1980: 7)
c. *shi-be*
1SG-milk
'my milk' (from my own breasts)
(Young and Morgan 1980: 28) (Navajo, Na-Dene)

Another recurrent source for the possessive marker are elements that encode a relation between two entities, but not one of possession. In such cases, the elements in question develop a possessive meaning as a result of context-driven inferences. A case in point are constructions that describe the location of some entity X in relation to some other entity Y, of the type 'X *at* Y', 'X *at the place/home* (of) Y'. The relevant constructions can be reinterpreted as possessive ones, plausibly because an entity described in terms of its location with respect to some other entity can be inferred to belong to the latter (Claudi and Heine 1989; Heine 1997: chap. 2). As a result, a locative element within the construction becomes a possessive marker, 'the X *of* Y'. This is illustrated in (12)–(14) below for Ngiti, Acholi, and Kabyie. In these languages, the relevant markers are limited to alienable possession, and they may or may not be used with the same noun depending on whether the referent is alienably or inalienably possessed. This contrast is illustrated by (13a) and (13b), as well as by (14a) and (14b).[5]

(12) a. *àba* ***bhà*** *ɨdzalí-nga*
father POSS courtyard-NOMLZ
'my father's courtyard' (cf. *ibhà* 'at home')
(Kutsch Lojenga 1994: 154)
b. *ɔtsʉ-du*
hand-1SG.INAL.POSS
'my hand'
(Kutsch Lojenga 1994: 202) Ngiti (Nilo-Saharan)

5 Elements encoding a relation between two entities have been shown to be a recurrent source for possessive markers crosslinguistically. This is the case not only with locative elements, but also, for example, with ones marking beneficiaries, recipients or sources ('the X for Y', 'the X to Y', 'the X from Y': see Heine 1997 for a detailed overview). These elements, in fact, also function as possessive markers in many languages, but in many cases there are no alienability splits, or descriptions of the language do not establish a link between the different functions of individual elements. The cases discussed here have been selected both because they involve alienability splits, and because descriptions of the language make explicit hypotheses about how the relevant elements developed a possessive function.

(13) a. *wiìc* ***pā*** *látɛ̋ɛ̄n*
head POSS child
'the head of the child' (e.g., a sheep's head belonging to the child, cf. *pā* 'house')
(Claudi and Heine 1989: 5; Crazzolara 1955: 47)

b. *wiìc* *látɛ̋ɛ̄n*
head child
'the child's (own) head'
(Claudi and Heine 1989: 5; Crazzolara 1955: 47) (Acholi, Nilo-Saharan)

(14) a. *kólú* ***tɛ́*** *píya*
blacksmith POSS children
'the blacksmith's children' (typically those living in his compound but not his own, cf. *tɛ́* 'home')
(Heine et al. 1991: 148)

b. *kólú* *píya*
blacksmith children
'the blacksmith's (own) children'
(Heine et al. 1991: 148) (Kabyie, Niger-Congo)

2.2 On the motivations for individual processes

The various processes just discussed provide no evidence that the development of the relevant possessive markers is related to alienability. Sometimes, the source element is used in a possessive construction, but it does not encode a relation between possessor and possessee. Instead, it is used to refer to some entity involved in the situation being described (the possessee, or sometimes, as in the Navajo example in (11), its source), and it takes on the possessive meaning associated with the construction as a whole. Alternatively, the source element encodes a relation between two entities, but not one of possession, and it takes on a possessive meaning that can be inferred from the context. In both of these cases, the evolution of the source element into a possessive marker is a result of a process of metonymization (Traugott and Dasher 2005): some form takes on a meaning associated with its context of occurrence, in this case a possessive meaning. Metonymization has been shown to play a pivotal role in processes of constructional reiterpretation, particularly grammaticalization, and it is usually assumed to be triggered by the contextual co-occurrence of particular forms and particular meanings, not properties of the resulting grammatical patterns (see, for example, Bybee et al. 1994; Heine 2003; Slobin 2002; Traugott and Dasher 2005). Under this analysis, there is no reason to

assume that the metonymization processes that give rise to the possessive markers in question reflect principles pertaining to the use of overt marking for alienable and inalienable possession. Instead, these processes are triggered by the contextual co-occurrence of the elements undergoing metonymization and the possessive meaning.

In principle, alienability could play a role in the use of the source elements, in the sense that these elements might or might not be used depending on the relative degree of conceptual contiguity between possessor and possessee, or the relative need to disambiguate the possessive relation. In this case, alienability would ultimately still be responsible for the development of the relevant possessive markers. This could be the case when the semantics of the source element involves the notion of possession, for example, 'X, property (of) Y', as in (9a) above. This does not apply to other source elements, however. Some of these elements denote possessors, but they are used to single out the relevant referents ('X, that (of) Y' or 'that X (of) Y') or to specify particular semantic properties of these referents ('X, thing/food/drink … (of) Y'), not to signal their possessor status. Other source elements denote additional participants involved in the situation being described, as in the Navajo example in (11). Yet other elements are used to encode relations other than possession (such as locative relations). While the relevant constructions are possessive ones, or may acquire a possessive meaning as a result of context-driven inferences, these various functions are unrelated to possession, so it is difficult to see how they could be affected by principles pertaining to alienability.[6]

In fact, the idea that such principles are responsible for alienability splits is crucially based on the fact that they provide an explanation for two synchronic distributional patterns. The first pattern involves the synchronic distribution of overt and zero marking in particular alienability splits, that is, the fact that overt marking is restricted to alienable possession, or zero marking is restricted to inalienable possession. The second pattern involves the synchronic distribution of these splits crosslinguistically, that is, the fact that they are significantly more frequent than splits where overt marking is restricted to inalienable possession, or

6 In the case of locative constructions (e.g. 'the X at Y') or other constructions used to encode a relationship between two entities ('the X from Y', 'the X to Y'), one could assume that these constructions are actually used by speakers in order to convey the idea that the entities in question are in a possessive relation, so that the use of these constructions might ultimately depend on properties of alienable and inalienable possession. In this case, however, it is not clear why speakers would not use constructions that explicitly convey the notion of possession, e.g., appositive constructions such as 'X, property (of) Y' or the like.

zero marking is restricted to alienable possession. In the following two sections, it will be shown that neither of these patterns can actually be taken as evidence for such principles.

3 Explaining the distribution of individual markers

If the development of particular possessive markers is indeed independent of the properties of alienable and inalienable possession, as argued in the previous section, the question arises as to why the distribution of these markers is constrained by alienability, in the sense that they are restricted to alienable possession, or are not used for some cases of inalienable possession. The literature on the origins of these markers is based on a general (if often implicit) assumption that this is a result of a diachronic scenario where they develop in alienable possession contexts and are either not extended or only partially extended to inalienable possession ones (rather than being initially used and then lost in the latter contexts: see, for example, Claudi and Heine 1989; Creissels 2001; Koptjevskaja-Tamm 1996; Schuh 1983). In this case, explanations for the distribution of individual markers should ultimately account for why they develop in alienable, rather than inalienable possession contexts. In what follows, it will be shown that this is a direct reflection of the distribution of the source construction, which is usually not used in inalienable possession contexts due to various types of incompatibilities unrelated to possession.

3.1 Alienability splits follow from the distribution of the source construction

In some cases, inalienable possession contexts are relatively incompatible with the function of the constructions that give rise to particular markers. As observed by Schuh (1983, 1990) in regard to Chadic, for example, constructions of the type ‘that X (of) Y’, ‘X, that (of) Y’, which are at the origin of the possessive markers illustrated in (3)–(6), are not usually used with inalienable nouns, that is, expressions such as ‘that mother of John’, ‘that arm of John’, ‘the mother, that of John’, ‘the arm, that of John’ are usually anomalous, except in highly particularized contexts. A possible explanation for this is that these constructions are used to single out particular referents. The referents of inalienable nouns such as kin terms and body part terms do not usually need singling out, in the case of kin terms because they are highly

individuated, and in the case of body part terms because they are not salient discourse referents (Dahl and Koptjevskaja-Tamm 1998; Koptjevskaja-Tamm 1996).

A comparable example is represented by constructions such as the Navajo one in (11). These constructions are originally used to encode both the possessor and the external source of some item (e.g., 'my something('s) milk' in the sense of 'my milk from some external source'). This is incompatible with inalienable possession contexts, because in these contexts there is no external source for the possessee, for example, in (11c), 'my milk (from my breast)', the possessor is also the source of the milk.

In other cases, there are incompatibilities between inalienable possession contexts and the lexical semantics of the construction. The various appositive nouns illustrated in (7)–(10), 'thing', 'food', 'drink', 'tree', 'property' and the like are all semantically incompatible with kin terms, body part terms, and other terms designating parts of a whole, as these terms do not display the relevant semantic properties. For example, kins and body parts cannot be characterized as objects belonging to somebody or as somebody's food or drink. Locative constructions such as the ones in (13)–(14), 'the X at Y', 'the X at Y('s) place/home', are incompatible with body parts, as these cannot be described as being located at the possessor's home (so that constructions of the type 'the head at the child's place', for example, will be interpreted as referring to some alienably possessed item, as in (13a)). These constructions are in principle compatible with kin terms, e.g., 'the mother at John's place', but it is to be expected that they will usually not be used with these terms, both because kins are often not located at the possessor's place (though see the discussion of Example (16) below), and because location is immaterial to the characterization of kinship relations anyway.

These incompatibilities provide a ready explanation for the alienability splits in the use of the relevant markers. Individual markers will initially be used in contexts compatible with the distribution of the source construction. This phenomenon has been shown to be pervasive in grammaticalization processes, and is often referred to as persistence: the distribution of the source construction determines the initial distribution of the resulting grammatical markers (Hopper and Traugott 2003). If some source construction is not used in inalienable possession contexts, it is to be expected that the resulting possessive markers will not be used in those contexts either, at least initially. These incompatibilities, however, originate from properties of inalienable possession contexts unrelated to possession, such as the fact that inalienable nouns do not usually need to be singled out in discourse, the fact that there is no external source for the possessee, or a contrast between the semantics of particular inalienable nouns and that of various types of appositives.

Over time, the use of individual markers may gradually be extended beyond their original contexts of occurrence (see, for example, Eksell Harning 1980; Koptjevskaja-Tamm 1996; Schuh 1983). This explains both why some markers are

also used in some inalienable possession contexts, and why the distribution of these markers across such contexts often varies in a seemingly arbitrary fashion crosslinguistically. As discussed in relation to Examples (3)–(6) above, for instance, some markers can be used for inalienable possession in general, but this use is disfavored, while others are used for a subset of inalienable nouns, which varies from one language to another.

Extension could be influenced by various properties of the relevant contexts, potentially including general properties of alienable and inalienable possession. For instance, given that inalienable nouns inherently convey the concept of possession, specific inalienable nouns might resist the extension of an existing possessive marker. This resistance could arise because these nouns are typically used with a possessor, resulting in the entrenched use of the old possessive construction with zero marking (Dahl and Koptjevskaja-Tamm 1998; Koptjevskaja-Tamm 1996).[7] In this case too, however, the fact that the relevant markers are not used in particular inalienable possession contexts ultimately stems from the fact that the source construction was not used in those contexts, for reasons unrelated to possession.

3.2 Some further distributional evidence

Some further facts about the crosslinguistic distribution of possessive markers also support the idea that this distribution depends on the distribution of the source constructions that give rise to individual markers, rather than general properties of alienable and inalienable possession.

In several cases, the use of specific markers is influenced by semantic factors that cut across alienability distinctions. This results in patterns where the same type of possession (either alienable or inalienable) is either overtly marked or not in different contexts. Additionally, some instances of inalienable possession are overtly marked, while certain cases of alienable possession are not. These patterns contrast with both the assumption that overt marking depends on general properties of alienable and inalienable possession and the assumption that overt marking inherently favors one possession type over the other.

7 This hypothesis resembles explanations of alienability splits in terms of economy, in that it presupposes that the fact that inalienable nouns imply the notion of possession plays a role in the use of zero possessive marking with these nouns. In contrast to these explanations, however, the semantics of inalienable nouns is assumed to ultimately motivate the entrenchment and retention of an existing zero marking strategy, not the use of this strategy in the first place.

The first assumption implies that all instances of alienable or inalienable possession should be treated uniformly in terms of overt marking. The second assumption implies that if overt marking is employed for inalienable possession at all, it should be employed in all cases of alienable possession as well. However, these patterns find their explanation in the distribution of the source constructions that give rise to the relevant possessive markers.

In Old French, for example, the possessive marker *de* was used in contexts where the possessor was inanimate (Palm 1977). Inalienable possession with inanimate possessors was overtly marked, as illustrated in (15a), whereas inalienable and alienable possession with animate possessors were not, as illustrated in (15b) and (15c).

(15) a. *ele vint au mur **del** castel*
she came to.the wall of.the castle
'She came to the wall of the castle'
(Aucassin et Nicolette XVI) (Old French, Romance)
(Palm 1977: 108)

b. *Les os Eumon et Agolant*
the bones Eumon and Agolant
'The bones of Eumon and Agolant'
(La chanson d'Aspremont, 4391)
(Palm 1977: 43)

c. *La maison l' emperor*
the house the emperor
'The house of the emperor'
(Le roman de la rose, 1038)
(Palm 1977: 54) (Old French, Romance)

This distribution is consistent with the origin of the possessive marker, as *de* originally encoded motion away from some point of origin ('from', 'away from', 'out of': Heine 1997, among others), and points of origin are usually inanimate entities.

In Mandinka (see also Creissels, this volume), possession may or may not be overtly marked for different nouns involving the same type of relation between possessor and possessee, for example, as illustrated in (16), 'slave' versus 'master', 'wife' versus 'husband', or 'pupil' versus 'teacher'.

(16) a. *à **la** jòŋo*
3 POSS slave
'his slave'
(Creissels 2001: 446)

b. *à* *màario*
3 master
'his master'
(Creissels 2001: 446)

c. *à* ***la*** *mùsoo*
3 POSS wife
'his wife'
(Creissels 2001: 446)

d. *à* *kèe*
3 husband
'her husband'
(Creissels 2001: 446)

e. *à* ***la*** *kàrandiŋo*
3 POSS pupil
'his pupil'
(Creissels 2001: 446)

f. *À* *kàrammoo*
3 teacher
'his teacher'
(Creissels 2001: 446) (Mandinka, Niger-Congo)

This pattern is explained by the fact that the possessive postposition, *la*, was originally a locative postposition (ultimately derived from a non meaning 'mouth', 'opening', 'edge'). The postposition is used for possessees that can be described as being located at the possessor's place, for example, slaves, wives, or pupils, as these live at the master's, husband's or teacher's place respectively, but not masters, husbands, or teachers, as these do not usually live at the slave's, wife's, or pupil's place (Creissels 2001; Grégoire 1984).

In Ngiyambaa, kinship relations are marked by the dative affix *-gu*, also used for alienable possession, goals, and purpose. Other cases of inalienable possession, on the other hand, are zero marked (Donaldson 1980). This is consistent with the fact that, in kinship relations, the possessee can be conceptualized as performing a specific function for the possessor, for example, being a parent, child, or sibling to someone. This is, in fact, paralleled by English expressions such as 'mother/brother to John', 'secretary to the minister', or 'queen to Henry the Eight'.

(17) a. *bura:y-* ***gu*** *ba:ba:*
child-DAT father
'child's father'
(Donaldson 1980: 230)

b. *ŋadhu* *giyanhddha-nha* *ŋidji-la:* *winar-**gu**-dhi* *miri-dji*
I fear-PRES this.CIRC-EST woman-DAT-CIRC dog-CIRC
'I am frightened of this woman's dog'
(Donaldson 1980: 107)

c. *ŋani-la:* *mayi* *waɽaŋun*
that-EST person waɽaŋun
'that person's *waɽaŋun* (spirit)'
(Donaldson 1980: 231) (Ngiyambaa, Australian)

Some languages also display patterns where the use of particular markers is restricted to inalienable possession, whereas alienable possession is encoded by different markers. In Faroese, for example, the dative preposition *til* 'to' is mostly used for kinship relations, whereas alienable possession is encoded by the locative preposition *hja* 'at' (Stolz et al. 2008: 231).

(18) a. *mamma* ***til*** *Kjartan*
mum to Kjartan
'Kjartan's mum'
(Stolz et al. 2008: 223)

b. *eg* *havi* *[…]* *gamla* *gandastavin* ***hjá*** *Charlie*
I have:1SG old:ACC wand:DEF at Charlie
'I have got Charlie's old wand'
(Stolz et al. 2008: 222–223) (Faroese, North Germanic)

From a synchronic perspective, such patterns are entirely consistent with the hypothesis that there are general principles that favor the use of overt marking for alienable rather than inalienable possession. This hypothesis allows for overt marking to be used for inalienable possession as well, as long as it is also used for alienable possession. Diachronically, however, one possible scenario for the emergence of these patterns (to be investigated in each particular case) is one where distinct developmental processes give rise to possessive markers in alienable and inalienable possession contexts, respectively. If there were some general preference for the use of overt marking for alienable possession, one would expect new possessive markers to originate in alienable possession contexts and possibly be extended to inalienable possession ones, rather than originating in the latter contexts.[8] The fact that some marker develops in inalienable possession contexts, however, may be a result of the distribution of the source construction. For example,

8 Another possible diachronic pathway for such patterns is one where some marker is originally used for both inalienable and alienable possession, but becomes restricted to the former as a new marker develops for the latter. This scenario would be fully compatible with the assumption that the

as observed earlier in regard to Ngiyambaa, the use of dative markers for kinship relations is consistent with the semantic nature of these relations, so it is to be expected that dative markers may be used for these relations even if they are not used for alienable possession, as in Faroese.

4 Accounting for the crosslinguistic frequency of different alienability splits

The idea that the distribution of possessive markers across alienable and inalienable possession reflects the distribution of the source construction provides no specific explanation for the attested differences in the crosslinguistic frequency of various alienability splits. As described earlier, splits where overt marking is limited to alienable possession or zero marking is confined to inalienable possession are significantly more frequent than ones where overt marking is restricted to inalienable possession or zero marking is restricted to alienable possession. These frequency differences are traditionally regarded as evidence for principles favoring the former splits because they comply with general properties of alienable and inalienable possession.

Diachronically, however, the crosslinguistic frequency of different alienability splits will be a result of the frequency of those splits arising in particular languages, or being retained across different generations of speakers once they are in place in a language. As illustrated in Figure 1, alienability splits can arise as zero marking is replaced by overt marking either in alienable possession contexts but not in inalienable possession ones (diagram (i)), or vice versa (diagram (ii)). This may be a result of the development of a new possessive marker, or the extension of an existing one (for example, in a situation where alienable and inalienable possession are both zero or overtly marked in different cases, some marker may be extended to the cases of alienable possession that are zero marked, leading to zero marking becoming restricted to inalienable possession). Another possible developmental path for alienability splits is the replacement of overt marking with zero marking either in inalienable possession contexts but not in alienable possession ones (diagram (iii)), or vice versa (diagram (iv)), as a result of the loss of existing possessive markers.

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use of overt marking is favored for alienable, as opposed to inalienable possession, but it too should be investigated on a case-by-case basis.

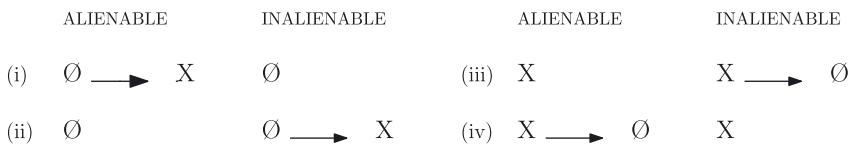

Figure 1: The development of alienability splits (Ø = zero marking; X = overt marking).

Existing splits will be retained or lost depending on whether overt marking or zero marking continues to be used in their respective contexts, as illustrated in Figure 2. Overt marking will be lost when existing possessive markers are replaced by zero marking, either in alienable possession contexts (diagram (i)) or in inalienable possession contexts (diagram (ii)). Zero marking will be lost as a result of the development of a possessive marker or the extension of an existing one, either in inalienable possession contexts (diagram (iii)) or in alienable possession contexts (diagram (iv)).

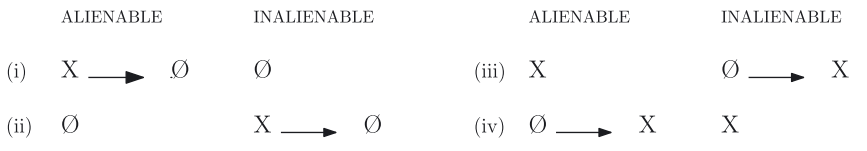

Figure 2: The loss of alienability splits (Ø = zero marking; X = overt marking).

These facts mean that any differences in the crosslinguistic frequency of different alienability splits will be a result of how frequently possessive markers develop in alienable and inalienable possession contexts, or are retained, lost or extended across these contexts. The relative crosslinguistic frequency of these phenonena is logically independent of the properties of alienable and inalienable possession, and should therefore be investigated in its own right.

In particular, one possible diachronic scenario that may explain the observed differences in the crosslinguistic frequency of different alienability splits is one where possessive markers develop more frequently in alienable possession contexts compared to inalienable possession ones. This results in zero marking being more frequently replaced by new possessive markers in the former contexts than in the latter. To achieve this, two possibilities exist: either the source constructions giving rise to possessive markers are more frequently employed in alienable possession contexts than in inalienable possession ones, or the developmental processes whereby these constructions actually give rise to such markers are more frequent in the former contexts than in the latter.

As discussed in Section 3, whether a source construction is used in alienable or inalienable possession contexts can be linked to properties of that construction that are independent of possession. In such cases, alienability will not influence the crosslinguistic distribution of individual constructions across these contexts. Similarly, if specific developmental processes are unrelated to alienability, as argued in Section 2, this factor won't affect how these processes are distributed across alienable and inalienable possession contexts.

Consequently, understanding the relative crosslinguistic distribution of particular source constructions or developmental processes across alienable and inalienable possession contexts should rely on an analysis of the properties of those constructions and processes themselves, rather than general properties of alienable or inalienable possession.

As detailed earlier, for example, in several cases where a possessive marker is not used for inalienable possession, this is explained by the fact that the marker is derived from an appositive or a locative construction relatively incompatible with inalienable possession contexts, of the type illustrated in (7)–(10) and (12)–(14) above. Other types of appositive or locative constructions, however, could in principle be used in such contexts, e.g., 'the mother, the parent of John', 'the arm, the body part of John', 'the heart in John', or 'the cover on the book'. These constructions could give rise to possessive markers used for, or possibly restricted to inalienable possession.

If possessive markers consistently develop from the former type of appositive or locative constructions but not from the latter, this can be because the former type of constructions are more frequent crosslinguistically, or because they more frequently give rise to possessive markers. Yet, the relative crosslinguistic frequency of different locative or appositive constructions and that of the developmental processes in which they are involved need not be related to alienability, so these phenomena should be investigated independently.[9]

Another possible diachronic scenario that may explain why specific alienability splits are significantly more common than others crosslinguistically involves

9 For instance, a possible hypothesis about why particular appositives are not used with semantically compatible inalienable nouns could be that the meaning of the appositive is implied by the meaning of the inalienable noun, as is the case in constructions such as 'the mother, the parent of John' or 'the arm, the body part of John'. Appositive expressions, however, are often redundant crosslinguistically. As illustrated in (7)–(10), for example, expressions meaning 'thing' are used in apposition to nouns denoting objects, and expressions meaning 'food', 'drink', or 'tree' are used in apposition to nouns denoting food, drink, and vegetable items respectively (to the point that particular nouns can be used in apposition to themselves, as in (7d)). Thus, the explanation of why particular appositive constructions fail to give rise to markers used for inalienable possession requires a more precise understanding of the function of appositive constructions in general.

changes in the distribution of existing possessive markers, either through extension or loss. For instance, it's possible that existing markers are more frequently extended from inalienable to alienable possession contexts than the reverse, resulting in zero marking being more frequently replaced by these markers in alienable possession contexts than in inalienable possession ones. Alternatively, existing markers might be more commonly lost in inalienable possession contexts than in alienable possession ones, leading to zero marking emerging more frequently in the former than the latter.

The extension, retention and loss of existing markers are much less investigated than the development of new ones, and they are arguably independent of the origins of individual markers. It is possible, then, that these phenomena are related to general properties of alienable and inalienable possession, such as the relative degree of conceptual contiguity between possessor and possessee, the relative need to disambiguate the relation between the two, or the relative degree of entrenchment of an existing possessive construction, as mentioned in Section 3.1 in regard to extension.

These properties, for instance, could favor the extension of an existing marker to alienable possession contexts, or its loss in inalienable possession ones. This resembles the concept of natural selection in biological evolution: the distribution of genetic traits in a population is influenced by a preference for certain traits, driven by their adaptiveness to the environment, regardless of the processes that initially gave rise to those traits. Nevertheless, this idea should be thoroughly investigated through an examination of actual instances of extension, retention, and loss of existing possessive markers crosslinguistically.

The two scenarios just outlined have not really been investigated so far, so there is no evidence about which of the two is actually the case. The data discussed in this paper show that possessive markers recurrently develop in alienable possession contexts and fail to be extended to at least some inalienable possession ones. This, however, does not tell anything about the relative crosslinguistic frequency of these phenomena compared to the development of possessive markers in inalienable possession contexts, the extension of existing markers from these contexts to alienable possession ones, or the loss of existing markers in both types of contexts.

Ultimately, differences in the crosslinguistic frequency of different alienability splits cannot be taken as evidence for principles that favor or disfavor these splits because of general properties of alienable and inalienable possession. These differences will be a possibly combined of several different phenomena that need not be related to alienability, namely the differential development, extension, retention or loss of possessive markers across alienable and inalienable possession contexts. These phenomena remain largely unexplored, and their respective role should be disentangled in order to account for the relative crosslinguistic frequency of individual splits.

5 Concluding remarks

Classical explanations of alienability splits in the use of overt and zero possessive marking imply that this use reflects principles of optimization of grammatical structure, either in the sense that it iconically matches the relative degree of conceptual contiguity between possessor and possessee, or in the sense that it economically matches the relative need to disambiguate the possessive relation. These principles are assumed to be responsible both for the distribution of overt and zero marking across alienable and inalienable possession in particular languages, and for the relative crosslinguistic frequency of different alienability splits.

Diachronic evidence about the origins of the relevant alienability splits shows, however, that the possessive markers involved in these splits recurrently arise through the reinterpretation of pre-existing elements originally performing other functions in various types of source constructions. These constructions are all associated with the notion of possession, either inherently or contextually, so they recurrently give rise to possessive markers from one language to another.

The development of such markers, however, is a result of metonymization processes triggered by the contextual co-occurrence of the source element and the possessive meaning, independently of the assumed optimization principles. The distribution of individual markers across alienable and inalienable possession ultimately reflects the distribution of the source construction, also independently of such principles. When particular markers are not used for inalienable possession, the source construction is one not used in inalienable possession contexts, for reasons unrelated to possession. When the source construction is used in particular alienable or inalienable possession contexts, the resulting possessive markers are used in those contexts, irrespective of whether possession is zero or overtly marked elsewhere in the language.

This is in line with standard accounts of grammaticalization processes and processes of constructional reinterpretation in general, in that the development and initial distribution of the constructions resulting from such processes are usually assumed to be driven by the properties of particular source constructions and their contexts of use. Similar source constructions and developmental processes will recurrently give rise to constructions with similar distributions crosslinguistically, but this is independent of the synchronic properties of the resulting grammatical patterns (see, for example, Bybee 2006; Bybee et al. 1994).

This analysis makes it possible to account for a number of synchronic patterns that go against the assumed optimization principles, for example, patterns where the same possession type (either alienable or inalienable) is not always treated in the same way in terms of overt or zero marking, ones where overt marking is used for

inalienable possession while zero marking is used for at least some cases of alienable possession, or ones where possessive markers may have originated in inalienable, rather than alienable possession contexts.

This analysis also provides an explanation for the notorious difficulties in defining crosslinguistically valid grammatical categories of alienable and inalienable possession (Chappell and McGregor 1996; Nichols 1988, among many others). Possessive markers are not used for the same range of alienable or inalienable nouns crosslinguistically, which makes it difficult to define some general category of alienable or inalienable possession that could account for the synchronic distribution of such markers in different languages. This is naturally explained by the fact that individual markers continue the distribution of the source, and are gradually extended to more and more contexts over time. Markers with different distributions will be derived from different sources, or will be at different stages of extension from one possession context to another.

In this analysis, the explanation of the emergence of particular alienability splits is distinct from the explanation of why some splits are significantly more frequent than others crosslinguistically. Particular splits can be a result of the properties of multiple source constructions and their contexts of use, rather than general properties of alienable and inalienable possession. The attested differences in the crosslinguistic frequency of different splits will reflect differences in the frequency of multiple source constructions, multiple developmental processes whereby these constructions give rise to possessive markers, or multiple processes of extension, retention or loss of these markers once they are in place in a language. The latter differences may or may not be related to alienability, and they remain to be investigated.

In accordance with prior diachronically oriented typological research (Bybee 2008; Claudi and Heine 1989; Creissels 2001; Aristar 1991), these facts call for a novel, source-oriented approach both to alienability splits in the use of overt and zero possessive marking and recurrent crosslinguistic patterns in general (for detailed discussion, see Cristofaro 2013, 2017, 2019; Schmidtke-Bode and Grossmann 2019). This approach is similar to Evolutionary Phonology and other diachronically oriented approaches to crosslinguistic phonological patterns (Blevins 2004; Ohala 1993, 2003). In language typology, recurrent crosslinguistic patterns are generally assumed to be a result of recurrent diachronic phenomena that give rise to the pattern and shape its crosslinguistic distribution (Bybee 1988, 2008, 2009; Givón 1975, 1979; Greenberg 1969, 1978). Yet, explanations for individual patterns and their relative crosslinguistic frequency are usually framed in terms of synchronic properties of these patterns, such as whether they comply with some assumed principle of optimization of grammatical structure. This

implies that the development, retention or loss of particular patterns crosslinguistically will ultimately depend on their synchronic properties. These phenomena, however, can be a result of several distinct diachronic factors, often unrelated to the synchronic properties of the pattern. Explanations of individual patterns and their crosslinguistic frequency should then be informed by an understanding of these factors, rather than particular synchronic properties of the pattern in themselves.

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Abbreviations

ADN	adnominal
BF	buffer
CIRC	circumstantive
EST	established reference
EXCL	exclusive
F	feminine
INAL	inalienable
M	masculine
NOMLZR	nominalizer
PL	plural
POSS	possessive
SG	singular

References

Aristar, Anthony Rodrigues. 1991. On diachronic sources and synchronic patterns: An investigation into the origin of linguistic universals. *Language* 67(1). 1–33.

Blevins, Juliette. 2004. *Evolutionary phonology: The emergence of sound patterns*. Cambridge: Cambridge University Press.

Bybee, Joan. 1988. The diachronic dimension in explanation. In John A. Hawkins (ed.), *Explaining language universals*, 350–379. Oxford: Basil Blackwell.

Bybee, Joan. 2006. Language change and universals. In Ricardo Mairal & Juana Gil (eds.), *Linguistic universals*, 179–194. Cambridge: Cambridge University Press.

Bybee, Joan. 2008. Formal universals as emergent phenomena: The origins of structure preservation. In Jeff Good (ed.), *Linguistic universals and language change*, 108–121. Oxford: Oxford University Press.

Bybee, Joan. 2009. Language universals and usage-based theory. In Morten H. Christiansen, Christopher Collins & Shimon Edelman (eds.), *Language universals*, 17–40. Oxford: Oxford University Press.

Bybee, Joan, Revere Perkins & William Pagliuca. 1994. *The evolution of grammar*. Chicago & London: The University of Chicago Press.

Chappell, Hilary & William McGregor. 1989. Alienability, inalienability and nominal classification. In *Proceedings of the fifteenth annual meeting of the Berkeley Linguistics Society*, 24–36.

Chappell, Hilary & William McGregor. 1996. Prolegomena to a theory of inalienability. In Hilary Chappell & William McGregor (eds.), *The grammar of inalienability: A typological perspective on body part terms and the part-whole relation*, 3–30. Berlin & New York: Mouton De Gruyter.

Chappell, Hilary & Sandra A. Thompson. 1992. The semantics and pragmatics of associative *de* in Mandarin discourse. *Cahiers de Linguistique Asie Orientale* 21. 199–229.

Claudi, Ulrike & Bernd Heine. 1989. On the nominal morphology of 'alienability' in some African languages. In Paul Newman & Robert Dale Botne (eds.), *Current approaches to African linguistics*, vol. 5, 3–19. Dordrecht: Foris.

Crazzolara, Joseph Pasquale. 1955. *A study of the Acooli language*. London: Oxford University Press.

Creissels, Denis. 2001. Catégorisation et grammaticalisation: la relation génitivale en Afrique. In Robert Nicolaï (ed.), *Leçon d'Afrique (hommage à Gabriel Manessy)*, 433–454. Paris: Peeters.

Cristofaro, Sonia. 2013. The referential hierarchy: Reviewing the evidence in diachronic perspective. In Dik Bakker & Martin Haspelmath (eds.), *Languages across boundaries: Studies in memory of Anna Siewierska*, 69–93. Berlin & New York: Mouton de Gruyter.

Cristofaro, Sonia. 2017. Implicational universals and dependencies between grammatical phenomena. In Nick Enfield (ed.), *Dependencies in language: On the causal ontology of linguistic systems*, 9–24. Berlin: Language Science Press.

Cristofaro, Sonia. 2019. Taking diachronic evidence seriously: Result-oriented versus source-oriented explanations of typological universals. In Karsten Schmidtke-Bode, Natalia Levshina, Susanne Maria Michaelis & Ilja A. Seržant (eds.), *Explanation in typology: Diachronic sources, functional motivations and the nature of the evidence*, 25–46. Berlin: Language Science Press.

Croft, William. 2003. *Typology and universals*, 2nd edn. Cambridge: Cambridge University Press.

Dahl, Östen & Maria Koptjevskaja-Tamm. 1998. Alienability splits and the grammaticalization of possessive constructions. In *Papers from the XVIth scandinavian conference of linguistics*. Turku: University of Turku & Åbo Akademi.

Dahl, Östen & Maria Koptjevskaja-Tamm. 2001. Kinship in grammar. In Irène Baron, Michael Herslund & Finn Sørensen (eds.), *Dimensions of possession*. Amsterdam & Philadelphia: John Benjamins.

DeLancey, Scott. 1986. Relativization as nominalization in Tibetan and Newari. Paper presented at the 19th International Conference on Sino-Tibetan Languages and Linguistics, Ohio State University, Columbus, OH, 12–14 September.

Donaldson, Tamsin. 1980. *Ngiyambaa*. Cambridge: Cambridge University Press.

Eksell Harning, Kerstin. 1980. *Analytic genitive in the modern Arabic dialects*. Gothenburg: University of Gothenburg Press.

Gardiner, Shayna. 2017. What's mine is yours: Stable variation and language change in Ancient Egyptian possessive constructions. *Canadian Journal of Linguistics/Revue canadienne de linguistique* 62. 639–660.

Givón, Talmy. 1975. Serial verbs and syntactic change: Niger-Congo. In Charles N. Li (ed.), *Word order and word order change*, 47–112. Austin, TX: University of Texas Press.

Givón, Talmy. 1979. *On understanding grammar*. New York, NY: Academic Press.

Greenberg, Joseph H. 1969. Some methods of dynamic comparison in linguistics. In Jan Puhvel (ed.), *Substance and structure of language*, 147–203. Berkeley & Los Angeles, CA: University of California Press.

Greenberg, Joseph H. 1978. Diachrony, synchrony and language universals. In Joseph H. Greenberg, Charles H. Ferguson & Edith A. Moravcsick (eds.), *Universals of human language, vol. 1: Method and theory*, 62–91. Stanford, CA: Stanford University Press.

Grégoire, Claire. 1984. Le syntagme déterminatif en mandé nord. *Journal of African Languages and Linguistics* 6. 173–193.

Haiman, John. 1983. Iconic and economic motivation. *Language* 59(4). 781–819.

Haiman, John. 1985. *Natural syntax*. Cambridge: Cambridge University Press.

Haspelmath, Martin. 2008. Frequency versus iconicity in explaining grammatical asymmetries. *Cognitive Linguistics* 19(1). 1–33.

Haspelmath, Martin. 2017. Explaining alienability contrasts in adpossessive constructions: Predictability versus iconicity. *Zeitschrift für Sprachwissenschaft* 36(2). 193–231.

Heine, Bernd. 1997. *Possession: Cognitive sources, forces, and grammaticalization*. Cambridge: Cambridge University Press.

Heine, Bernd. 2003. Grammaticalization. In Brian D. Joseph & Richard D. Janda (eds.), *The handbook of historical linguistics*, 576–601. Oxford: Blackwell.

Heine, Bernd, Ulrike Claudi & Friedericke Hünnemeyer. 1991. *Grammaticalization*. Chicago, IL: University of Chicago Press.

Hoch, James E. 1997. *Middle Egyptian grammar*. Benben: Mississauga.

Hopper, Paul J. & Elizabeth Closs Traugott. 2003. *Grammaticalization*, 2nd edn. Cambridge: Cambridge University Press.

Kammerzell, Frank. 2000. Egyptian possessive constructions: A diachronic typological approach. *Sprachtypologie und Universalienforschung* 53(1). 97–108.

Koptjevskaja-Tamm, Maria. 1996. Possessive noun phrases in Maltese: Alienability, iconicity and grammaticalization. *Rivista di Linguistica* 8. 245–274.

Kutsch Lojenga, Constance. 1994. *Ngiti: A central-Sudanic language of Zaire*. Cologne: Rüdiger Köppe.

Lichtenberk, František. 1983. *A grammar of Manam*. Honolulu, HI: University of Hawai'i Press.

Lichtenberk, František. 2018. The diachrony of Oceanic possessive classifiers. In William B. McGregor & Søren Wichmann (eds.), *The diachrony of classification systems*, 165–200. Amsterdam & Philadelphia: John Benjamins.

Li, Charles & Sandra A. Thompson. 1981. *Mandarin Chinese: A functional reference grammar*. Berkeley & Los Angeles, CA: University of California Press.

Moyse-Faurie, Claude & Françoise Ozanne-Rivierre. 1983. Subject case markers and word order in New Caledonia and Loyalty Islands languages. In Amran Halim, Lois Carrington & Stephen A. Wurm (eds.), *Papers from the Third International Conference on Austronesian Linguistics, vol. 4, Thematic variation* (Pacific Linguistics C77), 113–152. Canberra: The Australian National University.

Nichols, Johanna. 1988. On alienable and inalienable possession. In William Shipley (ed.), *In honor of Mary Haas*, 557–609. Berlin & New York: Mouton de Gruyter.

Ohala, John J. 1993. The phonetics of sound change. In Charles Jones (ed.), *Historical linguistics: Problems and perspectives*, 237–278. London: Longman.

Ohala, John J. 2003. Phonetics and historical phonology. In Richard D. Janda & Brian D. Joseph (eds.), *The handbook of historical linguistics*, 669–686. Oxford: Blackwell.

Ozanne-Rivierre, Françoise. 1976. *Le iaai, langue mélanésienne d'Ouvéa (Nouvelle-calédonie): phonologie, morphologie, esquisse syntaxique*. Paris: Selaf.

Palm, Lars. 1977. *La construction li filz li rei et les constructions concurrentes avec a et de étudiées dans des œuvres litéraires de la seconde moitié du xiie siècle et du premier quart du xiiie siècle*. Uppsala: Almqvist & Wiksell.

Pennacchietti, Fabrizio A. 1968. *Studi sui pronomi determinativi semitici*. Napoli: Istituto Orientale di Napoli.

Ross, Malcolm. 2001. Mussau. In John Lynch, Malcolm Ross & Terry Crowley (eds.), *The Oceanic languages*, 148–166. Abingdon: Routledge.

Schmidtke-Bode, Karsten & Eitan Grossmann. 2019. Diachronic sources, functional motivations and the nature of the evidence: A synthesis. In Karsten Schmidtke-Bode, Natalia Levshina, Susanne Maria Michaelis & Ilja A. Seržant (eds.), *Explanation in typology: Diachronic sources, functional motivations and the nature of the evidence*, 223–241. Berlin: Language Science Press.

Schuh, Russell G. 1977. Bade/Ngizim determiner system. *Afroasiatic Linguistics* 4. 101–174.

Schuh, Russell G. 1983. The evolution of determiners in Chadic. In Ekkehard Wolff & Hilke Meyer-Bahlberg (eds.), *Studies in Chadic and Afroasiatic linguistics*, 157–210. Hamburg: Helmut Buske.

Schuh, Russell G. 1990. Re-employment of grammatical morphemes in Chadic: Implications for language history. In Philip Baldi (ed.), *Linguistic change and reconstruction methodology*, 599–618. Berlin & New York: Mouton de Gruyter.

Seiler, Walter. 1985. *Imonda, a Papuan language* (Pacific Linguistics B-93). Canberra: The Australian National University.

Shi, Yuzi & Charles N. Li. 2002. The establishment of the classifier system and the grammaticalization of the morphosyntactic particle *de* in Chinese. *Language Sciences* 24. 1–15.

Slobin, Dan I. 2002. Language evolution, acquisition and diachrony: Probing the parallels. In Talmy Givón & Bertram F. Malle (eds.), *The evolution of language out of pre-language*, 375–392. Amsterdam & Philadelphia: John Benjamins.

Stolz, Thomas, Sonja Kettler, Cornelia Stroh & Aina Urdze. 2008. *Split possession*. Amsterdam & Philadelphia: John Benjamins.

Thompson, Chad. 1996. On the grammar of body parts in Koyukon Athabascan. In Hillary Chappell & William McGregor (eds.), *The grammar of inalienability*, 651–676. Berlin & New York: Mouton de Gruyter.

Traugott, Elizabeth C. & Richard B. Dasher. 2005. *Regularity in semantic change*. Cambridge: Cambridge University Press.

Yap, Foong Ha, Fanny Pik-ling Choi & Kam-siu Cheung. 2010. Delexicalizing di: How a Chinese noun has evolved into an attitudinal nominalizer. In An Van linden, Jean-Christophe Verstraete & Kristin Davidse (eds.), *Formal evidence in grammaticalization research*, 63–92. Amsterdam & Philadelphia: John Benjamins.

Young, Robert W. & William Morgan. 1980. *The Navajo language: A grammar and colloquial dictionary*. Albuquerque, NM: University of New Mexico Press.