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Constructicon-based description: A nominal modification case study

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Abstract

Constructional models of grammar are helpful tools for the analysis and description of un(der)-studied languages, leading to more accurate analyses. This is despite the fact that as a whole, working with and describing un(der)studied languages has been afforded little or no room in theoretical or empirical discussions in the Construction Grammar community. In particular, we suggest here that The Constructicon is a useful tool for the description and analysis of individual functional domains, and that thinking in Constructicon terms is likely to improve the accuracy of descriptions, reduce descriptive ambiguity, and point at areas of incipient and completed grammaticalization. To illustrate this, we focus on the domain of nominal modification in two typologically distinct languages: Alsea (Oregon Coast Penutian / Isolate; Oregon, USA) and Ụt-Ma'in (Niger-Congo, Kainji; Nigeria). We analyze the domain of nominal modification in each language as composed of sets of constructional families with different typologies of vertical and horizontal connections between them. This exercise illustrates how this type of work may contribute to typological comparisons of whole functional domains. Further, using Constructicons in descriptions allows scholars to explore general properties of constructional-networks based on a more linguistically diverse, and hence representative, picture.

1 Introduction

The constructicon, or the Construction-Net, is a major component of most constructional models of grammar, even if scholars disagree about its details and implementation (e.g., Goldberg 1995, 2019; Booij 2010; Michaelis 2012; Van de Velde 2014; Lyngfelt et al. 2018; Diessel 2019, 2020). In this network, constructions are nodes that are connected by different types of links, potentially including inheritance links between constructions of different abstraction levels, part-whole links, and sometimes also horizontal links between constructions of similar abstractness levels. Studies that harness constructional networks to analyze different phenomena, however, tend to focus on special, occasionally idiosyncratic, constructions in better known languages for which the basic grammatical facts are well understood and for which very large and machine-readable corpora are available, such as English (Goldberg 1992; Sag 1997; Goldberg & Jackendoff 2004), German (Hein 2017; Lyngfelt et al. 2018; Boas & Ziem 2018), or Russian

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(Janda et al. 2020; Bast et al. 2021). Recently, studies of historical morphosyntax started directly referring to and using the idea of constructional networks in their analyses (e.g., Traugott & Trousdale 2013; Barðdal & Gildea 2015; Sommerer & Smirnova 2020), highlighting its usefulness as a tool for understanding language change and proposing morphosyntactic reconstructions, as well as the potential role of diachronic studies in improving our understanding of different properties of constructional networks. The focus of these studies, however, likewise trends towards the same set of better-known languages for which the main grammatical facts are well understood.

The reliance on better-known, very large, languages is not limited to discussions of the constructional network, but can be also identified in other theoretical discussions in Construction Grammar with potentially problematic consequences for the study of lesser-known languages. Leclercq & Morin (2023), for example, argue against dropping Goldberg's principle of no synonymy (1995: 67). They propose to extend it towards "the principle of no equivalence" that highlights semantic, pragmatic, and social functions as factors to be considered when comparing the functional pole of formally different but functionally similar constructions. To support their position, they bring together a very robust and convincing array of arguments. This array, however, does not take into account the importance of this principle in the analyses of un(der)-described languages since (at least) Boas (1911). Without assuming something like the principle of no equivalence, scholars run the risk of missing the actual function of many types of constructions while relying on well-known categories in their descriptions. Without such a principle, even cross-linguistically common functional domains such as mirativity (e.g., Delancey 1997, 2012; Aikhenvald 2012), evidentiality (Aikhenvald 2003), and directionality (Schaefer & Gaines 1997; Guillaume 2016), run the risk of staying undetected by linguists. Different analyses may simply argue for two forms expressing the perfect aspect or past tense, instead of trying to identify the motivation(s) language users have to deploy each form. We suggest, then, that one should add to the already convincing argumentation of Leclercq & Morin (2023) the centrality of the principle of no equivalence in the description of un(der)-described languages.

Similarly, Silvennoinen (2023) masterfully argues for (also) treating constructions as social conventions (i.e., Popper's third-world entity), rather than only a mental category (i.e., Popper's second-world entity). The discussion there, however, leaves out the fact that constructional analyses of un(der)-described languages have to treat constructions as a social convention. Limiting the term construction to be solely a mental entity makes it appear as if Construction Grammar is not entirely relevant or useful for analyses of un(der)-described languages. Here, then, we adopt the position articulated in Silvennoinen (2023), as without it, constructional analyses as those illustrated below are impossible.

The limited range of languages that figure in most of the studies mentioned above stands in stark contrast to the wide range of languages that have been the focus of recently published typologically- and functionally-oriented grammatical analyses, be it in the form of papers dedicated to specific grammatical systems or phenomena, sections in sketch grammars, or chapters in full reference gram-

mars.[1] Many of these analyses accommodate, tacitly or explicitly, intentionally or accidentally, most of the major assumptions shared by different constructional approaches (e.g., Goldberg 2013). First, these studies are often surface-oriented in their approach to morphosyntax, and usually do not assume any sort of Deep vs. Surface Structure dichotomy. Second, the notion of a form-function pairing is a basic building block in many such descriptions, with the term "construction" often used to refer to abstract constructions with open slots.[2] These assumptions have proven to be useful analytic tools for describing different grammatical systems in the languages of the world.

In many reference grammars or sketch grammars, however, the relationships between constructions sometimes remain vague, and when directly described, little use is made of the different properties of a constructional-network. That is, an analysis in terms of constructional families is seldom directly explored. This rift, between the central status of the constructional-network in constructional models of grammar on the one hand, and its limited utilization in many (constructionally-inclined or not-adverse) grammatical descriptions on the other hand, is the initial motivation for this paper.

We want to ask why constructional-networks are so rarely used in descriptions of un(der)-described languages. More constructively, this question can be rephrased to ask whether constructional networks are a useful tool for describing the grammar of so-called "low-resource" or un(der)described languages, and whether analyzing relationships between constructions more directly as a network offers insights about grammatical systems that are difficult to come by using the usual descriptive practices.

The existence of this paper suggests that our answer to these questions is affirmative. Constructional-networks can be useful descriptive tools leading to more accurate analyses of grammatical systems, and using them in descriptions would allow scholars to explore general properties of constructional-networks based on a more linguistically diverse, and hence representative, picture. We illustrate this by exploring the domain of nominal modification in two languages that have been our recent descriptive focus: Alsea,[3] a dormant / awakening language of the Oregon Coast of the United States, and Ụt-Ma'in,[4] a Kainji language of Nigeria. We start with a brief survey of the features of constructional-networks that we believe may be most beneficial for scholars analyzing the grammar of un(der)described languages. Then, we explain the motivation behind choosing the domain of nominal modification to illustrate our claims and operationalize the term for the current study. We then illustrate the way in which scholars noted and dealt with the analytical problems that current descriptive practices cause. In Section 4 we turn to sketch the major modification constructions in Alsea and Ụt-Ma'in illustrating

1 It also stands in contrast to the range of languages studied in other, non-constructional, models of grammar.

2 This does not entail that this is the only type of form-function correspondence these studies consider. Rather, it is quite plausible that the status of abstract structures with open slots as form-function pairing, i.e., as constructions, is more important to highlight than the constructional status of simple lexical items like *avocado*.

3 Alsea: ISO 639-3 [aes]; glottocode [alse1252].

4 Ụt-Ma'in: ISO 639-3 [gel]; glottocode [kagf1238].

some of the insights that thinking in network terms can bring. We then synthesize our analyzes, compare them with the more traditional descriptive approach, and end with some conclusions, proposals, and open questions.

2 Constructicon and functional domains: constructional families in constructional quilts

Constructional analyses often show that what might look like a single, unified, grammatical phenomenon is best captured by a family, or a set, of related mother and daughter constructions. These constructions differ in some aspects of their form and their function, but they all share a common core of functional and structural properties that are inherited from the mother construction. A constructional family essentially forms a sub-network within the general constructional-network of a language in the sense that there is a combination of functional and formal properties that all of these constructions share, but no other construction(al family) does.

The properties shared by members of a constructional family may be very specific in that they include a specific lexical item such as *way* or *one* deployed in a specific slot with a specific function. Goldberg & Michaelis (2017), for example, show that the uses of English Numeric *one* and English Anaphoric *one* are best captured as a constructional network where the English Anaphoric *one* inherits many of the formal and functional properties of English Numeric *one*. Other constructional families involve more abstract constructions that do not share any specific lexical items, but share open constructional slots with similar forms and functions. Goldberg & Jackendoff (2004), for example, argue for four related major constructions in the English family of Resultative constructions (see also Peña Cerval 2017). These constructions vary in terms of transitivity as well as the function and form of the Result Phrase, and may also serve as mother constructions for daughter constructions such as the Fake Reflexive Resultative construction as in *She belched herself comfortable*. Constructions may also inherit information from several mother constructions. In Sailer's HPSG analysis of the English Cognate Object construction (e.g., *smile a smile*), the Abstract Object Cognate Object daughter construction (e.g., *smile the smile of reassurance*, Sailer 2010: 196) inherits information from two mother constructions within the network. In Van de Velde's (2014: 145–146) sketch of a subset of the Dutch network of clause constructions, the Transitive Resultative construction inherits ("blends") information from two distinct mother constructions: the Transitive construction and the Resultative Predicate construction.

The starting point of these analyses, and many others concerned with constructional families, is a combination of language-specific formal and functional properties that are shared by the constructional kin. These properties are defined in a language-specific way, and the shared nature of their combination allows scholars to set up constructional (sub-)networks in which all constructions uniquely share a combination of properties that is not shared by constructions outside the family. There might, however, be constructions that share major portions of the

functional pole of the family, but little of the formal ones. For example, Sag (1997) identifies members of the English Relative Clause constructional-family based on both formal and functional properties. Other English noun-modifying clauses, often labeled "phrasal compounds" as in *a [leave me alone] approach*, are not members of this family because of their formal properties, but they share functional properties with the English Relative Clause and Clausal Complement constructions.

Studies of the grammar of un(der)described languages tend to concentrate (at least initially) on general domains that are first defined in functional terms (e.g., intransitive predication, predicative possession), and describe the major constructions used to express these domains. This general analysis is a prerequisite for any analysis of finer-grained phenomena, for which an understanding of basic grammatical constructions is necessary. Constructions associated with such a particular general functional domain, however, may have very different structural and functional properties and may not form a constructional family as the English Resultative or English Cognate Object constructional-families. The constructions used to express a particular functional domain do not necessarily share some set of unique properties that are not also shared by other constructions. Some functional domains, then, may be expressed by several disjoint constructional families that have no unique properties in common, so they do not form a sub-network within the Constructional Network. This is illustrated by our discussion of modification below. More likely, the properties that these constructions share are very abstract, and they may be subsumed under a very general node in the constructicon, such as "clause" or "referential expression", which would likely have additional daughter constructions.

Situations like this are what Gildea (2012: 474) calls a "patchwork quilt" of forms spread over a bed representing some functional domain. This metaphor is motivated by Gildea's comparison of verbal clause constructions in the Cariban language family (e.g., Gildea 1998, 2012), where up to four different alignment patterns (including Ergative-Absolutive, Nominative-Accusative, and different inverse / split intransitive patterns) co-exist in the same language and each pattern is associated with different combinations of Tense-Aspect-Mood, person(s), or clause subordination. Gildea shows that the result is a set of disjoint clause-types. Each pattern has its own formal properties, i.e., different encoding of core arguments and its own functional niche, both a result of its unique historical development. This synchronic formal and functional disjointness entails a likely lack of synchronic constructional-family relations between these clause-types other than potentially a very general "verbal clause" mother-construction (if such a construction is indeed motivated). An accurate description of the constructions expressing basic functional domains, we propose, may often be more similar to Gildea's "patchwork quilt" than to a single constructional family. This situation is found in some systems of nominal modification: a number of formally and functionally disjoint constructional families co-habit the same functional domain, sometimes in their own niches, but sometimes with interesting overlaps in distribution. The opposite situation, where a functional domain can be described using a single, unified, constructional family, is also sometimes attested.

This situation underlines the usefulness of constructional-networks as a tool for describing the grammatical systems not only of better known languages, but also of un(der)described languages. On the one hand, scholars often want to unify their descriptions and provide a single template that "accounts" for all of the attested tokens expressing a functional domain. On the other hand, such templates often oversimplify grammatical structure by suggesting an inaccurate sense of synchronic (and perhaps also diachronic) unity which flattens grammatical complexities and grammaticalization processes. Casting descriptions in constructional-network terms assists in the charting and the identification of the differences and the overlaps in the form and function of different constructions and thus allows for a more accurate mapping of form-function correspondences in the domain described.

3 Nominal modification: approach, typology, descriptive practices

In the opening paragraphs of *La pensée sauvage*, Lévi-Strauss (1962) cites the use of abstract notions as property-terms in Kathlamet (Chinookan, Pacific Northwest[5]), where the phrase 'the small clam-basket' would be roughly rendered as "the smallness of a clam-basket" ("*la petitesse d'un panier à coquillages*"; see also Malchukov 2000: 19–23). Lévi-Strauss' goal in citing this example was to illustrate the ubiquity of complex and abstract notions across human cultures, but it also achieves another goal: it inadvertently points at the cross-linguistic diversity in the way speakers of different languages may structure together head-nouns and modifiers (see also more recently Louagie & Reinöhl 2022). Here, we wish to continue this line of analysis, and show that the domain of nominal modification may be composed of several distinct constructional families, each potentially with its own typological status and different number and type of daughter constructions. That is, languages differ not only in the properties of the coding means used to structure modified noun phrases (NP), but also in the distribution of these coding means in NPs with different types of modifiers, and as a result, in the way different modification constructions interact, or are linked to each other, in the grammatical system. The goal of this section is to briefly introduce the functional domain of nominal modification and the way it is often approached in grammatical descriptions of un(der)described languages. We start with a quick operationalization of what we mean by NP and by nominal modification and illustrate the relevant major typological axes of variation in the structure of modification constructions. After these, we illustrate the issues that arise out of the common descriptive practices of NP structure and some of the ways scholars overcome their shortcomings.

For the purposes of this paper, we follow the usual definition of NPs in the functional and typological literature as complete syntactic units that are used to refer to entities in discourse (following, e.g., Payne 1997: 33–38, Givón 2001: 55–69, Dryer 2007, Rießler 2016: 5; see Ono & Thompson 2020 for a critique of

[5] ISO 639-3 [wac]; glotocode [wasc1239]

this view). The common and prototypical uses of NPs include reference to core arguments, and they may further be used in other functions, such as predicates in nominal predication constructions. NPs may contain only a single pronominal element or be composed of an entire nominalized sentence, but they sometimes are composed of an element expressing the semantic head accompanied by determiners and different types of modifiers: quantifiers, numerals, property-terms such as adjectives, and entity-term modifiers usually expressing possessors. The focus of this paper is on nominal modification constructions that include property- or entity-term modifiers, but it expands to include other modifiers such as relative clauses, numerals, or quantifiers where these behave like property-terms or entity-terms in specific modification constructions.

The common structural typological axes of the encoding of the different components of modified NPs (e.g., Plank 1995; Rießler 2016) are the structural coding means involved: flagging, indexing, and relative order, and the locus of their deployment: head- or dependent-marking (e.g., Nichols 1986). Following Haspelmath (2005, 2019) and others, we use "flag" as a term that subsumes case markers and adpositions that signal the function of a constituent. In the context of modification construction, this would be its function in a modified NP construction.[6] Flags may be deployed on the modifier (e.g., genitive case markers in Ancient Indo-European languages signal the modifier function), the head nouns (as found in different construct state constructions; see below), and may also express the function of the NP in the clause or some other larger unit. Indexing, sometimes referred to as "agreement" or "cross-reference", includes the expression of grammatical categories (e.g., person, number, gender / class) associated with one element of the NP on another element.

To illustrate the deployment and distribution of different coding means in modified NPs, consider (1), from Kurmanji Kurdish (Indo-European, Iranian).[7] The semantic heads in the Kurdish examples, *hemjár* 'issue' and *miróv* 'man', are flagged by the Kurdish Ezafe markers that function essentially as Construct-State markers signaling their function as modified heads of NPs (see more details in Samvelian 2008, Gutman 2017: 96; for an overview of construct-state see Goldenberg 2013: 226–230; Creissels 2009, 2017). The entity-term modifier in (1a) is flagged by the Kurdish Oblique case, which indicates its modifier function but the property-term modifier in (1b) is unflagged and does not index any nominal features of its head.

[6] While Haspelmath (2019) defines flagging as we do here, as a term that subsumes case markers and adpositions, he ends up treating them in a way that would actually exclude some of the flags we identify here. A critical evaluation, and potential resolution, of these two definitions (as well as others) is beyond the scope of the current paper.

[7] Kurmanji Kurdish: ISO 639-3 [kmr]; glottocode [nort2641].

(1) Kurmanji Kurdish (Indo-European, Iranian; Thackston 2006: 12, 14; our glosses and parsing)[8]

a. *hejmár-a kovár-ê*
issue-CNST.FSG journal-OBL
'the issue of the journal'

b. *miróv-ê / miróv-ên mezin*
man-CNST.MSG / man-CNST.PL big
'the big man / men'

Coding means may also be correlated with one another. This is illustrated by the Tagalog examples in (2) where relative order of the head and the modifier is correlated with the flagging device and its locus. In (2), we find two relative orders of the property-term modifier *malaki* 'big' and the semantic head *bahay* 'house'. In the modifier - head order, *malaki* is flagged by the enclitic Linker [9] *ng* and in the head - modifier order by the Linker *na*. This example should also serve as a reminder that functional subdomains of nominal modification may themselves be complex: the nominal expressions in (2) indicate that the domain of modification by property-term in Tagalog is composed of (at least) two constructions.

(2) Tagalog (Austronesian; Himmelmann 2016: 328-329; in Louagie & Reinöhl 2022: 17; their glosses[10])

a. *ang malakí-ng bahay*
SPEC big-LNK house
'the big house'

b. *ang bahay na malakí*
SPEC house LNK big
'the big house'

To handle this variety, descriptions of nominal modification in reference grammar and thematic papers often synthesize their description using a general template of NP-structure, which illustrates the relative order of different possible NP components. This paper argues that such descriptions, while potentially illuminating, are oversimplified and conceal or trivialize much of the grammar associated with nominal modification. In lieu of such descriptions, we propose treating the domain of nominal modification (potentially) as a constructional quilt: a set of synchronically unrelated constructional families that interact in specific ways.

Arguments in favor of describing the domain of nominal modification as com-

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8 1, 2, 3 - first person etc.; ADJ - adjective; 1AG, 2AG... - agreement class; ASSOC - associative; C1, C2... - noun class; CNST - construct state; D - determiner; DEF - definite marker; DEM - demonstrative; DET - determiner; DIR - directional; DU - dual; ERG - ergative; EXCL - exclusive; F - feminine; IND - indicative; INCH - inchoative; INDEF - indefinite; LNK - linker; LOC - locative M - masculine; MOD - modifier; N - noun; NMZ - nominalizer; NP - noun phrase; NSPEC - nonspecific; NUM - numeral; OBJ - object; OBL - oblique; POSS - possessive; PSD - possessed; PSR - possessor; PST - past tense; PL - plural; Pfx - prefix; QUANT - quantifier; REL - relativizer; SAP - speech act participant; SBJ - subject; Sfx - suffix; SPEC - specific.

9 Defined here following Croft (2023: 135-138).

10 Tagalog: ISO 639-3 [tgl]; glottocode [taga1270].

-3	-2	-1	0	1	2	3
Quantifier_1	Determiner	**Property-term**	**'Noun'**	Quantifier_2	Entity-term	**Property-term** RC

Table 1: Maa NP template (adapted from Shirtz & Payne 2013; Payne 2020)

posed of different sets of constructions have recently been proposed, perhaps tacitly, by Louagie & Verstraete (2016). They convincingly show that contiguous and non-contiguous nominal expressions in Australian languages, including a nominal head plus some modifier, should be treated as distinct types of constructions based on the relative frequency and the function of each option. Louagie & Reinöhl (2022) further show that the relative order of semantic heads and different modifiers may have different degrees of structural rigidity in the same language, thus at least hinting at an analysis where different types of modifier-head combinations are a different construction. In this section, we illustrate further issues using examples from Maa (Nilotic; Kenya and Tanzania; Shirtz & Payne 2012, 2013)[11] and Hakhun Tangsa (Trans-Himalayan; India; based on Boro 2017).[12]

Shirtz & Payne (2012, 2013) and Payne (2020) use the template in Table 1 as a starting point for discussing Maa NPs while simultaneously showing that it does not adequately capture some key properties of Maa NPs. More specifically, the template does not capture patterns of the relative order of components or the fact that none of these positions has obligatory status. This is one of the major reasons leading Payne (2020) to the conclusion that Maa has "robust DPs but unruly NPs".

Maa property-terms can be found either before or after the 'noun', or semantic-head, position, with a slight tendency to follow it, as illustrated in Payne (2020). Some lexical items such as *kɪtí* 'small' usually precede the head, and may also follow it as in (3), but they may also be the only lexical element in the NP. Other lexical items, such as *kɪrɔtét* 'favorite', only follow their semantic head, but may also be the only lexical item in the NP, as illustrated in (4c). Similar order variability is found with some quantifiers as in (5).

(3) Maa (Nilotic, Payne 2020: 345-348)

a. *en=búku* (*kɪtí*)
FSG=book small
'a/the (small) book'

b. *ɛn=kɪtí* (*búku*)
FSG=small book
'a/the small (book)'

[11] Maa: ISO 639-3 [cma]; glottocode [maaa1253].

[12] Hakhun Tangsa: no ISO 639-3 code; glottocode [hakh1236].

(4) a. *ɔl = ayíóni* (*kɪrɔtét*)
MSG = boy favorite
'a/the (favorite) boy'
b. **ɔl = kɪrɔtét ayíóni*
MSG = favorite boy
'a/the favorite boy (intended)'
c. *enâ* (*kɪrɔtét*)
DEM.FSG favorite
'this favorite (woman)'

(5) a. *ɪmk = ájíjík pɔɔkín ɛnyénak*
FPL = houses all 3SG.PSSR.PL.PSSD
'all his houses'
b. *kʊnâ kɛ́ra áinêî pɔɔkín*
DEM.FPL children 1SG.PSSR.PL.PSSD all
'all these children of mine' [13]

The only position constantly used in (3)-(5) is the determiner position and Maa determiners are obligatorily deployed with many lexical elements as semantic heads (e.g., *búkʊ* 'book' and *ayíóni* 'boy'), but they are completely incompatible with several subsets of lexical elements (Shirtz & Payne 2012, 2013), and are not used in certain grammatical functions. Thus, none of the positions in the template above is completely obligatory and the relative order possibilities may depend on properties of specific lexemes. But this cannot be adequately captured by the template in Table 1.

Apart from issues of relative order and obligatory status, general NP-templates tend to oversimplify situations where multiple constructions with different structural properties express the same type of modification. Situations like this have already been illustrated in (3)-(5) above, and similar situations are found across the world, illustrated here also by Hakhun Tangsa (Trans-Himalayan; India, based on Boro's 2017 analysis). In Hakhun Tansga property-term modifiers may either precede or follow their semantic head. The relative order is correlated with the morphological form of the modifier. Hakhun Tangsa property-term modifiers may be morphologically "bare" or may be prefixed by the nominalizer *a-*.[14] Bare property-terms always follow their semantic head, as in (6a), while *a-* property-terms may either precede their head or follow it as in (6b) and (6c). Thus, the relative order of heads and property-term modifiers in Hakhun Tangsa is not completely dependent on the type of property-term modifier.

[13] Variation between ɛ/e, ɪ/i, and ɔ/o is due to Advanced Tongue Root (ATR) harmony common across Nilotic languages.

[14] Boro (2017) identifies several other types of property-term modifiers that we do not discuss here.

(6) Hakhun Tangsa (Trans-Himalayan, Boro 2017: 593, 213)

a. *vantap duŋ nɤ*
fireplace big LOC
'at the large fireplace' [15]

b. *a-dûŋ hók^{h}ə́m há*
NMZ-big king DAT
'to the big king'

c. *c^{h}ipk^{h}ərâ a-dûŋ̂*
ant NMZ-big
'big ants'

The examples above all include the same property-term modifier, *dûŋ* 'big'. *dûŋ* 'big' is not unique, and other modifiers, such as *sân* 'good' can also be found in all three options. Boro leaves the exact functional distinction between these three options for future research, but notes that modification by a "bare" property-term sometimes seems more likely to have a non-compositional, metaphoric or metonymic, interpretations (e.g., *vù sân* 'good omen' composed of *vù* 'bird' and *sân* 'good'), but sometimes (as in the examples given here) the interpretation is more compositional (Boro 2017: 83-88).

The examples given in this section (see also Louagie & Verstraete 2016; Louagie & Reinöhl 2022; Krasnoukhova 2022), as well as the discussion in Section 4 and in Section 5.1, illustrate some of the shortcomings of describing modified NPs using a single unified template. Scholars who identified these issues sometimes opt for a de-facto description as a set of constructions while maintaining the templatic description for illustrative or pedagogical reasons. As a result, these sets of constructions are seldom, if ever, synthesized into a more coherent network whole which would highlight the need for motivating the functional differences between them and ease the identification of instances of daughter constructions in different stages of grammaticalization (incipient, established, or estranged; see below). What we propose, then, is to routinize the use of constructional tools to describe the nominal modification domain, and adopt a systematic synthesis of different types of modification constructions that is based on a constructional-network to explore and describe the relationship between constructions and monitor for the rise of daughter-constructions.

4 A constructicon-based approach to modification in Alsea and Ụt-Ma'in

This section sketches the network of constructions expressing nominal modification in two languages: Alsea, a dormant / awakening language of the Oregon Coast, and Ụt-Ma'in, a Kainji language of Nigeria. A thorough description of the constructional-network of the domain in each language could easily top 30

[15] Tone marks left off in the original.

pages[16] and is not our aim in this section. Rather, we include here brief sketches of the major different nominal modification constructional families with some of their more prominent daughter constructions. The goal of this section is to illustrate how one can approach the domain of nominal modification as composed of a quilt of constructional families instead of a single, inaccurate, template. Further, this section illustrates how such descriptions help in forming questions about functional differences between constructions by highlighting areas where modification-types overlap. Third, this approach helps to identify areas of incipient constructionalization of novel daughter constructions, as well as what we label estranged-daughter constructions: constructions that have "left the family" and no longer express nominal-modification.

The nature of the network of modification constructions in the two sketches below is quite different. Alsea modification constructions are formally very different from each other, and are distinguished by sets of structural coding means (indexing, flagging) and the formal locus where some of these means are deployed. On the functional pole, some types of modification are expressed by a number of constructions. The nature of modification, be it modification by entity or property term, is only a part of the motivation for the deployment of any Alsea modification construction. Other considerations, like the discourse saliency of the referent, also play a role in language users' decision to deploy one construction or the other. The Ụt-Ma'in constructions, on the other hand, can be formally distinguished by the form of their head. This has to do with the morphological locus of the noun-class marker, the overall tonal pattern, and some other formal means. On the functional pole, there is little overlap in the nature of modification across constructions. For the most part, different types of modification are expressed by distinct construction. That is, the type of modification language users wish to express is the main motivation behind their choice of construction.

4.1 Alsea modification constructions

Alsea is a dormant/awakening language of the Oregon Coast, spoken along the mouth of the Alsea river. The Alsea data consulted with for this paper comes from texts published in Frachtenberg 1920, 1917, told by William Smith, Thomas Jackson, and others Frachtenberg does not mention by name. Altogether, the published Alsea texts are over 12,000 clauses long.

The Alsea domain of nominal modification is illustrated In Figure 1. Alsea has four major mother constructions in the domain of nominal modification, the juxtaposition construction, the *ts-* $-k^j$ relational construction, the SAP-possessor construction, and the Construct State construction. Each of these families has a number of daughter constructions. Most notably, the Alsea Relational *ts-* $-k^j$ construction underwent further constructionalization into a quotative construction, and this further constructionalized into a novel clause construction which "broke free" of the domain of nominal modification into the domain of clause constructions, thus becoming an "estranged" daughter construction. This is indicated in

[16] Further, it also relies on many other grammatical facts, including morphological forms and morpho-phonological patterns, that are usually described elsewhere in the grammar.

the network in Figure 1 by dotted arrow lines and dotted borders around this novel clause construction.

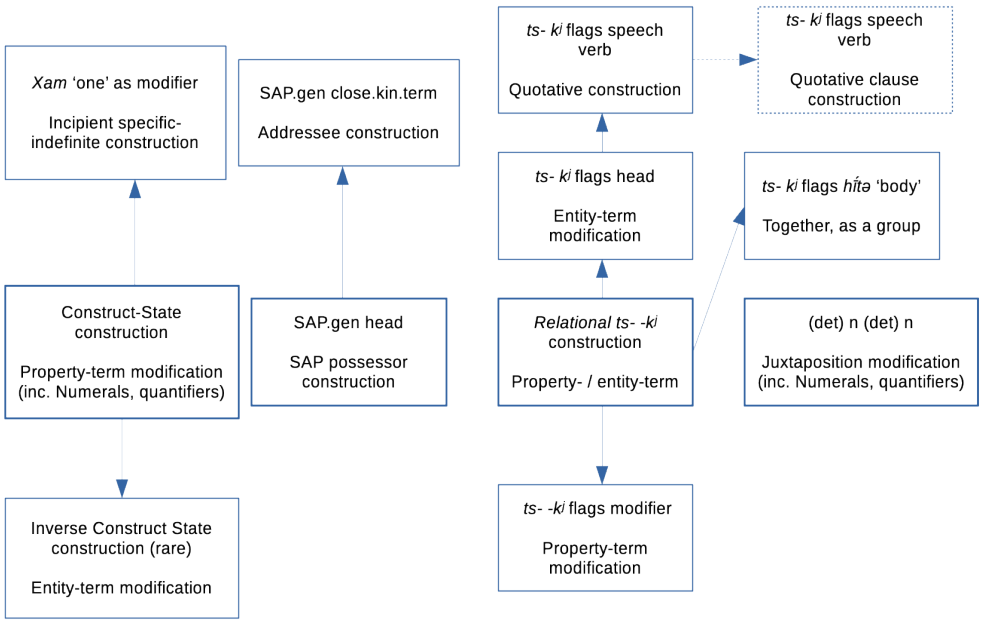

Figure 1: Alsea network of nominal modification domain

4.1.1 Alsea Juxtaposition modification construction

The Alsea Juxtaposition construction is infrequently deployed in the data. The majority of tokens expresses modification by quantifiers, illustrated in (7a), and a minority of instances expresses modification by a numeral as in (7b) or a property term. This constructional family is rather simple, composed of a single, general and semantically quite abstract, construction.[17]

(7) Alsea (Frachtenberg 1920: 174.1, 196.2, 148.31)

a. *hamstī? intskʲīs*
all thing
'everything'

b. *xéx̌ɬkʲ ts-imɬānástīyū-kʲ*
two REL-chief-REL
'their two chiefs'

[17] This short description leaves out a non-contiguous option, where the modifier, most frequently a quantifier or a numeral, is deployed clause-initially, and the semantic head is deployed elsewhere in the clause.

c. *qauwā?^{a} lá́tqat ɬt!awaít*
all different game
'all sorts of games'

4.1.2 Alsea Speech Act Participant (SAP) possessor constructional family

In this constructional family the modifier is expressed by a first or second person Possessive pronoun followed by the possessed head. Alsea has a dedicated series of first and second person Possessive pronouns that does not extend to third persons, so this construction is limited to possession by SAP or Speech Act Participants possessors. For the most part, the possessed head in this construction is a noun as in (8a) and (8b) where the Possessive pronouns *sin* 'my' and *pstin* 'your (dual)' modify *míɬax* 'lunch' and *hai^{n}?* 'mind'. The Possessive pronouns may also precede finite verbs, as in (8c) where *ham* 'your' precedes *yá́xau* 'is coming, is bringing', and the NP refers to the P argument of the event expressed by the verb, the caught fish being brought back, and the possessor expresses the A argument.

(8) Alsea (Frachtenberg 1920: 192.37, 160.36, 73.19)

a. *tə=**sín*** *míɬax*
DET=1SG.POSS lunch
'my lunch'

b. ***pstin*** *hai^{n}?*
2DU.POSS mind
'your minds'

c. *qamínt=ā axa **ham** yá́x-au*
be.many=Q back 2SG.POSS come-DUR
'Is it many (fish) you're bringing back?'

The Alsea SAP-Possessor construction is the source for one incipient constructionalization, where a combination of a first-person possessor pronoun like *sin* 'my' and a term for close-acquaintances such as *anaí́s* 'cousin, friend' is used in quoted speech to address the interlocutor in initial or final slots of conversational turns. This daughter construction posits more constraints on the possessive pronouns that may be used (first persons only, with a strong preference to first person singular pronouns), the type of possessed head (close kin terms like 'cousin' or 'friend'), and the conversational function of addressing an interlocutor in conversational turn boundaries.

(9) Alsea (Frachtenberg 1920: 46.21)

*xa=qa=ní́x k^{j}ts'-áa **sin** anaí́s*
2SG=ERG=2SG wear-IRR.TRNS 1SG.POSS friend

'you shall wear it, my friend!'

4.1.3 *ts- -k^{j}* attributive relation marker family of constructions

This Alsea constructional family is characterized by the deployment of the Relational circumfix *ts- -k^{j}*. The function of Alsea *ts- -k^{j}* is to signal that an element is to be interpreted relative to a 3rd person entity. It flags entity-terms as heads modified by other entity-terms and also flags property-term modifiers. Alsea *ts- -k^{j}* may be deployed in NPs where the only lexical element is a property term or an entity term. This is illustrated in (10a) where *ts- -k^{j}* is attached to *aqā?* and the phrase refers to an entity that is good, and in (10b) where *ts- -k^{j}* is attached to *qɬ́npa* 'quiver' and the NP refers to a quiver possessed by a discourse entity.

(10) Alsea (Frachtenberg 1920: 220.34, 154.16)

a. ***ts****-aqā?-tis-****k****^{j}*
REL-be.good-NMZ-REL
'a good thing'

b. *ku* = ***ts****-qɬ́npa-****k****^{j}*
DET = REL-quiver-REL
'his/her/their quiver'

Alsea *ts- -k^{j}* is more frequently deployed in NP containing a semantic head and a semantic modifier. When the modifier is a property-term, *ts- -k^{j}* is attached to the semantic modifier as in (11a) where *ts- -k^{j}* is attached to a nominalized form of *haya?* 'be big' and is followed by the semantic head *tas nū́ns* 'an elk'. When the modifier is an entity term, *ts- -k^{j}* is attached to the semantic head as in (11b) where *ts- -k^{j}* is attached to *ɬṓxlōx* 'tree bark', preceded by its modifier *pṓq^{u}* 'fir tree'.

(11) Alsea (Frachtenberg 1920: 176.7, 208.34)

a. ***ts****-hai-haya?-tis-****k****^{j}* *tas* *nū́ns*
REL-RED-be.big-NMZ-REL DET elk
'a big elk'

b. *kus* *pṓq^{u}* ***ts****-ɬṓxɬōx-****k****^{j}*
DET fir.tree REL-bark-REL
'fir-tree bark'

The distribution of Alsea *ts- -k^{j}* presented so far is contained within the domain of nominal modification. But the Alsea *ts- -k^{j}* construction(s) underwent several constructionalizations leading to the rise of novel modification constructions and one novel clausal construction, that is, an estranged-daughter construction which is outside the domain of nominal modification. The first example has to do with the constructionalization of the sequence *ts-hī́tə-k^{j}* 'their body' to be used to express groups of people acting together, especially with motion verbs suffixed by the directional marker *slō* as illustrated in (12a). The second constructionalization has to do with *ts- -k^{j}* flagging a nominalized speech verb, often followed by a mention of the speaker, illustrated in (12b) where the NP can be literally translated as "the old woman's speech". This daughter-construction is deployed after direct quotes and functions as a quotation marker.

This construction was reanalyzed as a clause construction expressing a speech event, rather than a quotative construction. After this reanalysis the construction is no longer a part of the domain of nominal modification, and is an estranged-daughter construction. This is illustrated in (12c) where the speech verb is nominalized and circumfixed by *ts- -k*^{j} but is followed by NPs expressing both the addressee of speech as an unflagged NP and the speaker as a NP flagged by the Alsea Ergative marker *q=*. The deployment of both arguments, and flagging of the speaker by the Ergative marker, indicate the deployment of the Alsea Transitive construction in this example and show that the nominalized form of the speech verb functions as a verbal predicate. This illustrates the reanalysis of the quotative construction as a novel clausal construction.

(12) Alsea (Frachtenberg 1920: 42.24, 32.12, 188.15)

a. *temú*^{n}*hū k*^{j}*exk*^{j}*-aí́-slō* ***ts****-hí́tə-****k***^{j}
and.now assemble-INCH-DIR REL-body-REL
'And now, they (the people) assembled together'

b. ***ts****-yəa-í́-s-****k***^{j} *as məshálslatsɬ̓ō*
REL-say-INCH-NMZ-REL DET old.woman
'the speech of the old woman'

c. ***ts****-im-yəa-í́-s-****k***^{j} *a-****ts****-sí́tə-****k***^{j} *q=as*
REL-DUR-say-INCH-NMZ-REL DET-REL-husband-REL ERG=DET
mukwá?stəɬ̓ī
woman
'The woman said to her husband'

The constructionalization illustrated in (12c) above is probably a recent constructionalization, as the range of verbs in this construction is limited to speech verbs and the contexts of use are parallel to those where the quotative construction might be deployed. This novel clause construction is no longer a modification construction: it "broke free" from the domain of nominal modification but has its undeniable historical roots in it. This is the reason for the dotted lines and dotted borders in the diagram in Figure 1 above.

4.1.4 Alsea Construct-State constructional family

This Alsea constructional family is mainly used to express property-term modification, including modification by numerals and quantifiers. In this construction, the modifier is suffixed by the Adjectivizer *-Vt* and the head is prefixed by the Construct-State marker *s-*. For the most part, the head and the modifier are adjacent and phonetically lean on each other, as in (13a) and (13b), but they may also be separated by different items as in (13c), where the modifier is followed by the Alsea 2DU Clitic pronoun *=aux*.

(13) Alsea (Frachtenberg 1920: 160.17, 74.6, 128.11)

a. *mā́k^{j}st-**it**=**s**-nū́ns*
fat-ADJ=CNST-elk
'fat elk'

b. *xéƛk-**it**=**s**-tsā́sidū*
two-ADJ=CNST-women
'two women'

c. *sūdā́^{q}st-**it**=aux **s**-pī́tskum ƛowáh-au*
five-ADJ=3DU CNST-day climb-DUR
'they climbed for five days'

One instance of incipient constructionalization can be identified with *xam* 'one' in the modifier slot, which may signal that the NP refers to an specific-indefinite entity. The clauses in (14) are among the first clauses in a story. The woman in (14a) is the main protagonist of the story, and the river in (14b) is a specific river on the opposite banks of which two opposing families lived. In both clauses, the function of *xam* 'one' is not to count the number of old women who lived in the village or the number of rivers the families lived near-by, but to signal that the NP denotes a specific, but indefinite, entity.

(14) Alsea (Frachtenberg 1920: 22.1, 148.10)

a. *xám-**ət**=**s**-məshálslatsƛō yā́ts-x*
one-ADJ=CNST-old.woman live-IND
'An old woman lived'

b. *tem īs xám-**ət**=**s**-nā́tk^{ji} tem yā́ts-x …*
and OBL one-ADJ=CNST-river and live-IND
'and they lived on a river (side by side)'

4.1.5 Modification-type overlap in Alsea

A constructional network approach to the Alsea domain of nominal modification highlights the fact that some sub-domains of modification are expressed by multiple constructions. We can identify overlaps in expression of modification by entity-term, modification by property-terms, and modification by numerals or quantifiers. The motivation Alsea users have in deploying these constructions, then, cannot be simply the need to modify nouns in some way. For reasons of space, this section will focus on two instances of overlap, one in the expression of entity-term and the other in the expression property-term modification, leaving other instances to future discussion.

First, modification by entity-term (essentially, attributive possession) is expressed in Alsea by two different constructions: the SAP-possessor construction and the *ts- -k^{j}* modification construction. The motivation for deploying each of these options is clear: the person category of the possessor. First and Second person possessors are expressed in the SAP-possessor construction and Third person possessors are expressed using the *ts- -k^{j}* construction.

Modification by property-terms may be expressed in Alsea by two distinct con-

structions, the Construct-State construction and the *ts- -k^{j}* construction. Briefly, the *ts- -k^{j}* construction is preferred when the referent of the NP is highly accessible, often already mentioned in the same clause or in an immediately preceding clause, or is present in the here-and-now of the speech event. To briefly illustrate the differences between these options, consider the examples in (15), where the semantic head is *nūns* 'elk' and the modifier is the property-term *haya?* 'be big'. In (15a), the big elk has not been previously mentioned and is mentioned as an explanation for the tracks found by the speaker. The clause in (15b), follows a lengthy discussion of the big elk. The big elk has been under discussion for several clauses and is mentioned in the immediately preceding clause. Thus, the referent of *nūns* 'elk' in (15b) is much more accessible than that in (15a). This difference in accessibility is the motivation behind the choice of the *ts- -k^{j}* construction over the Construct-State construction.

(15) Alsea (Frachtenberg 1920: 158.30, 176.7)

a. *tsā́mə tsqwa hī́k^{j}e hai-haya-ʔt-it=s-nū́ns*
very necessarily just RED-be.big-PTCP-ADJ=CNST=elk
'(the tracks are fresh) It is just a big elk'

b. *xamʔ taiʔ as nū́ns ts-hai-hayaʔ-t-is-k^{j} tas nū́ns*
one only DET elk REL-RED-be.big-ADJ-NMZ-REL DET elk
'It was just an elk, a bigness of an elk'

This section illustrated how a constructional network approach to the description of functional domains makes it easier to identify situations where the function of two (or more) constructions overlaps vis-à-vis the domain. Such overlaps call for further exploration or explanation of the functional motivation behind the deployment of each construction. It may be possible to articulate the functional motivation behind some such situations (as is done, however briefly, with the Alsea overlap described here), but even lengthy reference grammars cannot be expected to explore each such difference in detail. However, even when a motivation cannot be articulated (because of length issues or because it is not known at the time of writing), approaching functional domains as a constructional network highlights the need for such an explanation and underlines the complicated nature of grammatical domains.

4.2 Ụt-Ma'in modification constructions

Ụt-Ma'in is a Kainji language (Benue-Congo, Niger-Congo) spoken in northwestern Nigeria. Basic descriptions of the phonology and morphosyntax can be found in Smith [Paterson] (2007: 10–24) and Paterson (2019a: 15–81). This account is focused on nominal modification constructions. The Ụt-Ma'in domain of nominal modification is diagrammed in Figure 2.

Crucial to the analysis of nominal modification in Ụt-Ma'in is the form of the head noun and contiguous (ad)nominal class marking. For ease of explanation, we limit the examples in this section to two noun classes. Class 5 are singular forms; each class morpheme contains a characteristic [r,d]. Class 6 are the paral-

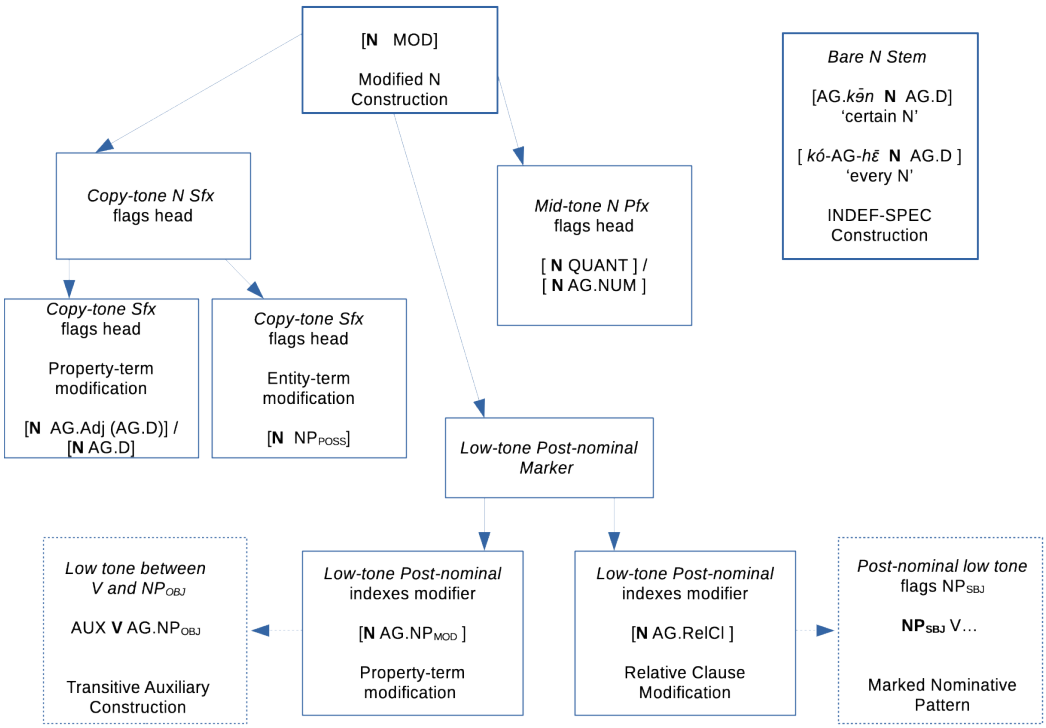

Figure 2: Ut-Ma'in network of nominal modification domain

Type of noun class flag	Singular forms	Plural forms	Co-occurring modifiers
Mid-tone prefix	***ə̄rkɔ́ːr***	***ə̄tkɔ́ːr***	Quant; No modifier
Copy-tone suffix	***kɔ́ːrə́r***	***kɔ́ːrə́t***	Def, Dem, A, Poss
No affix/ Bare Noun Stem	***kɔ́ːr***	***kɔ́ːr***	Indef-Spec
Low-tone post-nominal clitic	***kɔ́ːrdə̀***	***kɔ́ːrtə̀***	Nominal; RelCl

Table 2: Noun word forms and co-occurring modifiers in Ut-Ma'in

lel plural forms; each class morpheme contains a characteristic [t].[18]

Familial relationships between modification constructions become apparent when grouping these constructions based on the adnominal form with which they occur. Within the noun phrase, most modifiers follow the noun (N). This mother construction is modelled as [N MOD] and called the Modified N construction. However, the morphological shape of the noun is tightly dependent on which, if any, modifier immediately follows the noun word. For example, *kɔ́ːr* 'basket' can occur as any of the forms displayed in Table 2, depending on the number designation and any accompanying modifiers.

In the following sections, we demonstrate Ut-Ma'in NP constructional families using these various noun word forms as they occur with various modifier types

[18] Classes 5 and 6 markers have consistent consonantal manifestation, other classes with only vowel exponents display slightly different morphophonological behavior related to elision. See Smith [Paterson] (2007) for a thorough account of the noun class system.

and combinations of modifier types.

4.2.1 U̱t-Ma'in Noun Prefix construction

In the U̱t-Ma'in Noun Prefix construction, the semantic head is modified by a numeral modifier along with an index cross-referencing the head (16a) and (17a); or a quantifier, without such an index (17b). The noun is affixed by a prefix that indicates the noun class and carries a mid tone, (16a) and (17a). This is also the form that occurs in citation and in many constructions when no modifier occurs, (16b) and (17c).[19]

(16) U̱t-Ma'in (Author's fieldnotes)

a. *ə̄r-**kɔ́ːr*** *ə̄r-gàn*
C5-basket AG5-one
'one basket'

b. *ə̄r-**kɔ́ːr***
C5-basket
'a basket'

(17) U̱t-Ma'in (Author's fieldnotes)

a. *ə̄t-**kɔ́ːr*** *ə̄t-jə̄ːr*
C6-basket AG6-two
'two baskets'

b. *ə̄t-**kɔ́ːr*** *tʃāʃī*
C6-basket few
'a few baskets'

c. *ə̄t-**kɔ́ːr***
C6-basket
'baskets'

Of all the noun word forms, the mid-tone prefix form is the only one that occurs without other NP dependents, with the one exception of unmodified subjects. The form of the unmodified nouns in (16b) and (17c) is used in a wide variety of functions but decisively not an unmodified noun in subject position. That specialized subject form has developed from the U̱t-Ma'in Low-tone Nominal Modification construction discussed in Section 4.2.4 (see also Paterson 2019b, 2023).

4.2.2 U̱t-Ma'in Copy-tone Noun Suffix construction

In the U̱t-Ma'in Copy-tone Noun Suffix construction, a head noun is modified by a Definite Marker, Demonstrative, Adjective, or Possessive Pronoun. The head noun in this construction is flagged by a class marker suffix that copies the tonal

[19] The M-tone of the noun can be replaced by construction specific replacive tones; the M-tone of the numeral or quantifier is constantly M. For example, a Mid-tone Prefix construction which is the object of a locative phrase will occur with an initial H-tone from the locative construction: *ə́rkɔ́ːr ə̄rgàn* 'in/at/on one basket'.

quality of the final syllable of the head. These properties are demonstrated in (18) where the singular class 5 suffix *-ɘr* attaches to the head, *kɔ́ːr-ɘ́r* 'basket'.

(18) U̱t-Ma'in (Author's fieldnotes)

a. ***kɔ́ːr**-ɘ́r* *dɛ́ː*
basket-C5 AG5.DEF
'the basket'

b. ***kɔ́ːr**-ɘ́r* *ʤás-dɛ́*
basket-C5 red-AG5
'a red basket'

c. ***kɔ́ːr**-ɘ́r* *d-ín-dɛ̄*
basket-C5 AG5-DEM-AG5
'this basket'

d. ***kɔ́ːr**-ɘ́r* *īt*
basket-C5 1PL.EXCL.POSS
'our (excl.) basket'

In (19) the plural class 6 suffix *-ɘt* flags the head, *kɔ́ːr-ɘ́t* 'baskets'.

(19) U̱t-Ma'in (Author's fieldnotes)

a. ***kɔ́ːr**-ɘ́t* *tɔ́ː*
basket-C6 AG6.DEF
'the baskets'

b. ***kɔ́ːr**-ɘ́t* *ʤás-tɔ́*
basket-C6 red-AG6
'red baskets'

c. ***kɔ́ːr**-ɘ́t* *t-ún-tɔ̄*
basket-C6 AG6-DEM-AG6
'these baskets'

d. ***kɔ́ːr**-ɘ́t* *īt*
basket-C6 1PL.EXCL.POSS
'our (excl.) baskets'

Each modifier—Definite Marker, Adjective, and Demonstrative—follows the head and cross references it with the segmental forms *dɛ* and *tɔ*; Adjectives are a small lexical class with only eight as-of-yet attested members (Smith [Paterson] 2007: 86–87). No indexation occurs with Possessive Pronouns, (19d).

4.2.3 Bare Noun Stem

When the noun is modified by the circumfix-like Indefinite-Specific construction, then the noun phrase occurs with two indicators of noun class, one pre-nominal and one post-nominal, as demonstrated in (20). The form of the pre-nominal marker of class 5 is *dɛ̀kɛ̄n*; class 6 is *tɔ̀kɔ̄n*. The form of the post-nominal maker of class 5 is *dɛ̄*; class 6 is *tɔ̄*. The noun stem occurs in both class constructions as *kɔ́ːr*.

(20) Ụt-Ma'in (Author's fieldnotes)

a. *dɛ̀kɛ̄n* ***kɔ́ːr*** *dɛ̄*
AG5.one basket AG5
'a certain basket'

b. *tɔ̀kɔ̄n* ***kɔ́ːr*** *tɔ̄*
AG6.one basket AG6
'certain baskets'

This construction is frequently used in the introduction clauses of a narrative monologue to introduce characters for the first time or to indicate elements of the setting as in (21).

(21) Ụt-Ma'in (Author's fieldnotes)

nā *nɔ́ŋ* *wàkɘ̄n* ***zwār*** *= wā* *ɔ́kɔ̄n* ***tàːs*** *= ɔ̄*
NSPEC do.PST AG1.one young.man = AG1 LOC.AG3.one village = AG3

'There was a certain young man in a certain village.'[20]

4.2.4 Ụt-Ma'in Low-tone Postnominal "Clitic"

The Low-tone Post-nominal "Clitic" form is involved in the most complex construction within the Ụt-Ma'in domain of nominal modification. In this construction the head is modified by a relative clause or another noun (in the so-called "associative construction"; cf. Welmers 1963). The head is followed by a clitic that signals the noun class and carries a low tone. This clitic always directly follows the head and may be phonologically attached to the modifier as in *kɔ́ːr dùtɘ̄tɘ̄rsɛ̀* 'a third basket' or may be phonologically independent as in *kɔ́ːr dɘ̀ hɛ̄ːg* 'a basket that fell'. The phonological status of the clitic is phonotactically determined (see Smith [Paterson] 2007: 75–79 and Paterson 2019a: 81–96 for discussion and exemplification). If the morphological noun class marker involves a consonant, the structure of the form is always C(V) and the vowel is the epenthetic central vowel *ɘ* if the nominal modifier is C-initial. In (22), the class 5 form is *kɔ́ːr d(ɘ̀)*.[21] The class 6 form is *kɔ́ːr tɘ̀*.

[20] Here the LOC is expressed by a replacive H-tone on *ɔ́kɔ̄n* at the left edge of the NP.

[21] The central vowel *ɘ* is in parentheses because the vowel is only present when no other vowel is adjacent. In (22a), the following modifier begins with *u*, so no *ɘ* is present. The constructional meaning is carried by the Low Tone in every case, regardless of the vowel that bears the tone.

(22) Ụt-Ma'in (Author's fieldnotes)

a. ***kɔ́ːr*** *d-***L**= *u-tə̄tə̄rsɛ̀* [***kɔ́ːr*** *dùtə̄tə̄rsɛ̀*]
basket AG5-ASSOC= C3-third
'a third basket' (Lit: basket of third)

b. ***kɔ́ːr*** *d-ə̀* *hɛ̄ːg…*
basket AG5-REL fall.PST
'a basket that fell…'

c. ***kɔ́ːr*** *t-ə̀=t* *bɛ́rɛ́di*
basket AG6-ASSOC=C6 bread
'bread baskets' (Lit: baskets of bread)

d. ***kɔ́ːr*** *t-ə̀* *hɛ̄ːg…*
basket AG6-REL fall.PST
'baskets that fell…'

This construction produced two estranged daughter constructions. Both became clausal rather than part of a referential expression, i.e., constructions that are no longer in the domain of nominal-modification constructions. In the first instance, the low-tone post-nominal class marker obligatorily occurs between a bare NP Subject and the finite verb of a clause. This subject-marking pattern has developed from the reinterpretation of relative clauses as main clauses (Paterson 2019a,b, 2023). In (23), the class 5 form *káːr-də̀* 'tortoise-C5.SUBJ' occurs in the pre-verbal subject position of a fully finite main clause within a structured narrative. There is no way in this context to interpret it as a relative clause, and, therefore, we have nominal-modification morphological glue reanalyzed to function outside of the nominal-modification domain. Here, the reanalized relativizer is bound to the head and becomes the only marker of noun class for the subject NP. Reanalysis involves a realignment of phrasal boundaries from an NP that contains a relative clause with a structure such as [*káːr* [*də̀* V]$_{\text{REL.CL}}$]$_{\text{NP}}$ to an NP VP sequence with a structure like [*káːr-də̀*]$_{\text{NP}}$ [VP]. A similar example for class 6 taken from a Pear Story retelling (see Chafe 1980) is shown in (24); this also occurs as a main event line clause and cannot in context be interpreted as a relative clause.

(23) Ụt-Ma'in (Author's fieldnotes: 'How tortoise got his shell')

káːr-də̀ *ɔ́ːg* *dí* *pɔ̄r* *ɔ́kà=r-hə̀r*
tortoise-C5.SUBJ COP.PST AG5.OBJ beautiful like=C5-lizard.sp

'Tortoise was a very beautiful one, like a (kind of) lizard.'

(24) Ụt-Ma'in (Author's field-notes: Pear Story Retelling Ror Dialect)

mɔ́ŋgɔ̀r-tə̀ *àzgə̀-sːː-tɛ̀*
mango.fruit-C6.SUBJ pour.out-REP-PFT

'Mango fruit rolled out (of the basket)'

The second estranged daughter construction occurs when an object argument is included in a tense aspect configuration that requires an auxiliary, which encodes

the semantic predicate in an erstwhile nominalized complement. This structure has left the domain of nominal-modification and now functions as a marker of transitivity within the verb phrase. These are described in detail for a wide range of auxiliary constructions in Paterson (2019a: Chapters 7–8). It is not always clear how to interpret this beyond its role as morphosyntactic glue, obligatory for the inclusion of an object in a transitive auxiliary construction: it may be developing into a case-like flag on the object or it may be developing as object-argument index on the verb. Regardless, in the transitive structure the agreement marked low-tone form is now post-verbal and occurs as the only hint that the verb is "nominalized". It does not occur in the syntactically intransitive version of the same clause, (25a), where the nominal that encodes the event of eating is prefixed with the class 6 *t-*. It only occurs when there is an overt object, as in (25b), where the postnominal *t-* marks the associative phrase that contains the object.

(25) U̱t-Ma'in (Author's fieldnotes)

a. *ə̄m dɛ́ʔtɛ́ t-rɛ̄ ūsōt*
1SG.SUBJ FUT.OBL C6-eat tomorrow
'I must eat tomorrow.'

b. *ə̄m dɛ́ʔtɛ́ rɛ̄ t-ə̀=r-gá ūsōt*
1SG.SUBJ FUT.OBL eat AG6-ASSOC=C5-cooked.grain tomorrow
'I must eat cooked grain tomorrow.'

4.2.5 U̱t-Ma'in Modifiers in Combination

When more than one modifier occurs for the same noun within the same NP, the form of the noun word is determined by whichever modifier is immediately adjacent to the right edge of the noun. Here we demonstrated this difference for the class 6 plural. In (26a) the noun occurs with its class 6 prefix. All three examples in (26) contain the numeral *ə̄t-tə̄t* 'AG6-three', but in (26b) 'baskets' is further specified by the definite marker whereas in (26c) 'baskets' is further specified as 'baskets of bread'. In (26b) the definite marker occurs as the most immediate modifier; a copy-tone VC noun class 6 suffix, *-ə́t*, occurs on the head noun. In (26c), a noun modifier in an associative phrase occurs as the most immediate modifier, the numeral follows; the low-tone CV noun class 6 indicator, *tə̀*, occurs adjacent to the head noun.

(26) U̱t-Ma'in (Author's fieldnotes)

a. ***ə̄t-kɔ́ːr*** *ə̄t-tə̄t*
C6-basket AG6-three
'three baskets'

b. ***kɔ́ːr-ə́t*** *tɔ́ː ə̄t-tə̄t*
basket-C6 DEF.AG6 AG6-three
'the three baskets'

c. ***kɔ́ːr*** ***t-ə̀=t*** *bɛ́rɛ́dì =nɛ̀ ə̄t-tə̄t*
basket AG6-ASSOC=C6 bread.E=with AG6-three
'with three baskets of bread'

In (27a), the complex numeral *ɔ̄p ɔ́ = t-jɔ̄ːr* 'twelve' is the most immediate modifier; a mid-tone VC noun class prefix, *ɔ̄t-*, occurs on the head noun. In (27b), the same numeral occurs, however, the noun word form reflects the fact that an adjective is the immediately adjacent modifier.

(27) Ụt-Ma'in (Author's fieldnotes)

a. ***ɔ̄t-kɔ́ːr*** *ɔ̄p ɔ́ = t-jɔ̄ːr*
C6-basket ten and = C6-two
'twelve baskets'

b. ***kɔ́ːr-ɔ́t*** *ját-tɔ́ ɔ̄p ɔ́ = t-jɔ̄ːr*
basket-C6 big-AG6 ten and = C6-two
'twelve big baskets'

When a noun phrase contains two modifiers and no numeral is involved, an alternative pattern can occur. The modifier immediately adjacent still determines the form of the noun, but the second modifier is "linked" to the head by the low-tone CV noun class indicator. I demonstrate this phenomena for class 5 and 6 in (28a) and (28b) below. These examples come from a wordlist elicitation for singular and plural forms to reference 'pupil (of the eye)'. Alternative orders of modifiers for the class 4 noun *ɔ̄s-té* 'trees' are given in examples (29a): N ADJ QUANT; and (29b): N QUANT ASSOC, where the associative phrase is again required for the ADJ modifier to occur when not immediately adjacent to the head noun.

(28) Ụt-Ma'in (Smith [Paterson] 2007: 103.0010)

a. *já d-ɔ̀ = r-ís* ***d-ɔ̀*** *rìm-dɛ́*
baby AG5-ASSOC = C5-eye AG5 = ASSOC black-AG5
'pupil (of the eye)' Lit: baby of eye of black

b. *já t-ɔ̀ = r-ís* ***t-ɔ̀*** *rìm-tɔ́*
baby AG6-ASSOC = C5-eye AG6 = ASSOC black-AG6
'pupils (of the eye)' Lit: babies of eye of black

(29) Ụt-Ma'in (Author's fieldnotes)

a. *té-ɔ́s rɛ̀k-sɛ̀ s-tán hɛ́ːg*
tree-C4 small-AG4 AG4-five fall.PST
'Five small trees fell'

b. *ɔ̄s-té ɔ̄s-tán* ***s-ɔ̀*** *rɛ̀k-sɛ̀ hɛ́ːg*
C4-tree AG4-five AG4-ASSOC small-AG4 fall.PST
'Five small trees fell' Lit: 'five trees that (are) small fell'

The Indefinite-Specific Construction *dɛ̀-kɛ̄n … dɛ̄* can hold larger NP structures within which other modifiers occur. In those instances, the noun word form correlates with the modifier that immediately follows the noun word, as we expect. For example, in (30) it encompasses the phrase *jādɔ̀rtʃāmpá* which is itself a complex, but common, expression that includes an associative construction.

(30) Ụt-Ma'in (Author's fieldnotes)

dɛ̀-kɛ̄n *jā = d-ə̀ = r-tʃāmpá* ***dɛ̄***
AG5-there baby = AG5-ASSOC = C5-male AG5

'a certain male child'

Alternatively, the Indefinite-Specific construction can encompass the bare noun root, as expected, and be immediately followed by the low-tone CV noun class indicator which links a descriptive phrase, similar to its use in (28a), (28b), and (29b). In (31), the descriptive noun *r-gàg* 'C5-bitterness' sits outside of and following the last part of the indefinite *mɔ̄*.

(31) Ụt-Ma'in (Author's fieldnotes: Bənni Karikaka Ln26)

ɔ̄ *pə̀s* *wá* ***mɔ̀kɔ̄n*** *tá* ***mɔ̄***
C3.SUBJ spit 3SG.OBJ AG6b.there saliva AG6b
m-ə̀ = r-gàg
AG6b-ASSOC = C5-bitterness

'It (spitting cobra) spit some venom (at) him.' (Lit: It spit him some saliva of bitterness.')

5 Constructicons sharpen language-specific questions

5.1 What do templates not account for?

The previous section presented short sketches of the domain of nominal modification in two very different languages, with very different systems of nominal modification. The goal of these sketches was to illustrate some advantages of constructional networks as descriptive tools: how thinking in constructional network terms may improve one's understanding of the grammatical expression of different functional domains in individual languages. This section directly contrasts these descriptions with position-class templates of nominal modification constructions in Alsea and Ụt-Ma'in. Both of these position classes are a part of our own previous, published or unpublished, analyses which we felt did not properly account for the attested variety of modification constructions attested in our data.

Table 3, adapted from Paterson (2019a: 58), represents one way of envisioning the components of the Ụt-Ma'in noun phrase. However, it does not account for the form of the noun word itself (prefix, suffix, enclitic, or no expression of noun class), nor the form or location of noun class agreement marking on a modifier (prefix, suffix, or no expression of noun class agreement), nor the required tonal component for any particular noun phrase configuration. Further, requisite co-occurrence restrictions must be annotated to the template, in Table 3 by means of asterisks. For example, although not in paradigmatic alternation, demonstratives and definite marking do not co-occur with the indefinite-specific circum-morph structure.

-1	0	1	2	3	4	5
determiner	nominal stem	associative	property term	quanitifer	determiner	

(INDEF)*	N	(RELCL)***				(INDEF)*
		(ASSOC)	(ADJ)	(QUANT)	(POSS)	
					(DEM)**	
					(DEF)**	

*INDEFINITE marking is a two-part morpheme, i.e. a circum-morph.
**DEFINITE marking and DEMONSTRATIVES do not co-occur with INDEFINITE marking.
***Relative Clauses co-occur with nothing except INDEFINITE marking.

Table 3: Order of elements within the U̲t-Ma'in NP (adapted from Paterson 2019a: 58)

The template also does not account for the various allowed orders of (indef)definite markers, quantifiers, and associative phrase modifiers as presented in Section 4.2.5. where the focus was on using more than one modifier in a single expression. Notice also that the template does not account for the repetition of descriptive phrases, particularly the use of more than one associative phrase with reference to the noun head. U̲t-Ma'in noun phrases with multiple modifiers involve at least the following taken from the examples in 4.2.5:

- N ADJ QUANT
- N QUANT ASSOC.ADJ
- INDEF N ASSOC INDEF
- INDEF N INDEF ASSOC

All U̲t-Ma'in nominal modification constructions follow the pattern [N MOD]. However, beyond that head-initial tendency, other formal indicators vary. For example, the U̲t-Ma'in Copy-tone Modification constructions presented in Section 4.2.2 fit the pattern of [N MOD] but are further unified by at least two formal criteria that no other (sub-)constructional family displays:

1. The noun must be flagged with a noun class suffix of a particular structure:
   - a V(C) syllable,
   - with the central vowel *ɘ*, and
   - bear a tone that copies from the final syllable of the noun root.
2. ADJ, DEM, and D modifiers must bear noun class agreement marking; POSS do not bear noun class agreement marking.

Organizing the various U̲t-Ma'in modifier constructions into constructional families captures these seeming idiosyncrasies: unifying the broad nominal modification into constructional families that bear a particular combination of functional and formal properties.

Table 4 illustrates one possible generalization for the structure of Alsea modified NPs in the form of a position-class. As one can see, this table provides some useful information about the overall relative order of the head noun and its different modifiers. Some other generalizations that the table proposes is that Alsea Determiners are deployed in the left most position of the NP, and the position of quantifiers relative to other modifiers and the head noun.

-5	-4	-3	-2	-1	0	1
determiner	quantifier	possessor	relational modifier	construct modifier	nominal stem	relational modifier
DET	NUM QUANT	SAP POSS	property-term possessor	NUM property-term	N	property-term possessor

Table 4: A simplified position class of Alsea modified NPs

However, similarly to the issues we find with the U̲t-Ma'in position class, the position class in Table 4 does not give an entirely accurate picture of the way modification patterns are used in Alsea. First, the descriptive inaccuracies associated with morphological flagging found in U̲t-Ma'in are also attested in Alsea. As illustrated in 4.1.3 and 4.1.4, Alsea modification constructions sometimes involve morphological flagging of the head, the modifier, or both. The nature of this flagging depends on the type of modification involved, and this is not described by Table 4. The Alsea construct-state marker, *-s*, is deployed on the head noun with the modifiers listed in position -1 in Table 4. The Alsea relational circumfix *ts- -k*^{j} is deployed when modifiers from positions -2 and +1 in Table 4 are used. These morphological patterns are not a part of the position class and indeed cannot be represented by Table 4. The lack of representation of the morphological flagging associated with modification in Alsea in Table 4 is compounded by the fact that the semantic nature of the modifier in positions -2 and +1 is correlated with the element that is flagged by the *ts- -k*^{j} marker. If the modifier is an entity-term or a possessor, then the head is flagged by *ts- -k*^{j}. If the modifier is a property-term, then the modifier is flagged by *ts- -k*^{j}. This is missed by the position class diagram.

A second major issue with the position class in Table 4 is that it does not account for different types of dependency relationships across positions. Here, we just list a few such examples. First, an SAP possessor in position -3 is incompatible with a potential 3rd person possessor in positions -2 or +1. The numeral modifiers in positions -4 and -1 are incompatible with each other and are associated with different flagging patterns (no flag with position -4 numerals, Construct-State marker *s-* with position -1 numerals). Two 3rd person possessors, from positions -2 and +1 are incompatible with each others, and so are two property-term modifiers from the same positions. The property-term modifiers from positions -2 and +1 are incompatible with a property-modifier from position -1.

A further issue with this position class is that is does not allow for identifying instances of "estranged daughter" constructions such as the quotative construction discussed in 4.1.3. While the goal of the template in Table 4 is not diachronic, it is easy to see the diachronic relationship when modification constructions are treated as separate entities, and not pushed into the confines of a unifying template.

Perhaps most importantly, the position class description in Table 4 implies an inaccurate sense of unity suggesting that the Alsea domain of nominal modification can be described as a single grammatical entity. In fact, the different constructions that compose this domain, described above, differ from each other in their form and their function. The domain of nominal modification is composed of a set of constructions that are only unified by their modification function, but differ in the details of this function and the details of its morphosyntactic ex-

pression. It is better understood as an instance of what Gildea labels a quilt of constructions (Gildea 2012: 474) than to a single constructional block.

5.2 A typology of constructional-networks?

A second outcome is illustrating how thinking in network terms can enrich cross-linguistic comparison of systems expressing some functional domain. The sketches above illustrate how the domains of nominal modification in the two languages described here are quite distinct: the Alsea system is patchy and involves several distinct constructional families. The U̲t-Ma'in system is more unified as it is composed of a single, large, constructional family and a second, minor, construction. Further, the modification functional range of some Alsea constructions overlap and they express the same type of modification. The U̲t-Ma'in constructions do not overlap in this way. Modification by property-terms, for example, may be expressed by two different Alsea constructions and modification by numerals and quantifiers may be expressed by three distinct Alsea constructions. In U̲t-Ma'in, however, there is no "competition" between different types of modification constructions. The constructional quilts expressing nominal modification in Alsea and U̲t-Ma'in, then, differ in the relationship between different constructions and in the nature of correspondence between types of nominal modification and constructions. Another way of viewing the last type of difference is that in U̲t-Ma'in, expressing modification is the main motivation for deploying the different constructions, while in Alsea some other functions (e.g., discourse status of referents) are a part of the motivations for the deployment of a construction in discourse.

As thinking in constructional-network terms highlights situations of functional overlap, it also assists in an accurate description of the relationship between constructions of similar abstraction levels across constructional families, an area of active debate in Construction Grammar (e.g., De Smet et al. 2018). That is, this analysis highlights the need to chart the motivation behind the deployment of one construction over another, or at least raise questions about situations of functional overlap between constructions. Two such instances of overlap were briefly discussed above in Section 4.1.5, where functional motivations for the deployment of each option are discussed, albeit briefly. The need to capture the motivation behind each construction is, in our mind, directly related to the status of the principle of no equivalence (Leclercq & Morin 2023) and the requirement to describe each language, and each construction, in their own terms. This method avoids oversimplifying and trivializing language description while simultaneously providing a framework for the comparison of a particular functional domain (cf. Himmelmann 2022).

Thinking of the domain of nominal modification in constructional network terms, then, produces more accurate analysis of the grammar expressing different parts of the domain than treating NPs as a de facto position class. This is because, as shown in Section 3, there are mutual dependencies in the grammatical means that encode the semantic head and different types of modifiers. A network-based analysis further helps with identifying incipient and more advanced grammaticalization processes, thus improving our understanding of the evolution of at least

some constructions inside the domain, and, in the case of "estranged daughter" constructions, outside the domain.

6 Conclusions

This paper presented a case for thinking in constructional-network terms in descriptive work focused on so-called low-resource or un(der)-described languages. It showed that descriptions based on constructional-networks may result in more accurate descriptions of functional domains, and also allow for the identification of incipient or older instances of grammaticalization and lexicalization. At the same time, this paper highlighted the fact that functional domains, which are at the focus of much descriptive and typological work, may often include several distinct constructional families. These families often have some functional properties in common (as they express some parts of a given functional domain) but may have little formal properties in common. Further, it was shown that the degree to which each construction(al family) may be associated with a specific functional niche is questionable, and there may be considerable overlap in the usage of two (or more) constructional families in terms of a given functional domain.

Conflict of interest statement

The authors declare none.

License

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