

# MORPHOLOGY OF ~~DETERMINERS~~ (ARTICLES) \*

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## 1 Introduction

The present chapter provides a set of remarks pertaining to the *morphology of articles*.<sup>1</sup> Three insights are in the focus of attention: (A) the definite article and the indefinite article do not form a natural class; (B) both articles can be structurally complex; and (C) the structural presence of (parts of) an article is not necessarily correlated with its being directly/fully expounded, but is, sometimes, inferable from the presence of morphosyntactic associates (or other parts) of the article. It may be useful to begin with a note on the terms *morphology* and *articles*. Consider first the definition of *article* from the Oxford Concise Dictionary of Linguistics:

**article** A word or part of a word whose basic role is to mark noun phrases as \*definite or \*indefinite: e.g. definite *the* in *the girl*, indefinite *a* in *a girl*.

Traditionally a distinct \*part of speech; but usually described, since the mid-20th century, as a subclass of \*determiners.

(Matthews, 2014:27)

The definition suggests that (in-)definiteness marking is the main function of the articles.<sup>2,3</sup> In the tradition of treating definiteness as a binary-valued property, two kinds of articles are usually contrasted:

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<sup>1</sup>I will be using the following partly non-standard abbreviations and terminology: DA for *definite article*; IA for *indefinite article*; PA for *personal article*; AA for *adjectival article*; PD for *preposition-determiner* (as in, e.g., “PD-contraction”); NCM for *noun class marker*; NCL for *noun classifier*; NumCL for *numeral classifier*; I-domain/material *inflection-like morphology*; C-domain/material *article’s content/core morphology*. Regarding the glossing, I have tried to strike a reasonable balance between standard glossing conventions and adherence to the example sources.

<sup>2</sup>Definiteness is not a simple unified grammatical concept. For relevant discussion see Hawkins, 1978, Lyons, 1999, Vangsnes, 1999, Schwarz, 2009, among others, and in particular Chapters 12 and 18 of this volume. Cf. also Wiltschko, 2014, Section 6.4.3, on the non-universality of *definiteness* as a grammatical category and the broader notion of *anchoring* as a core function of DP. See also Chapters 2, 3, and 46 of this volume.

<sup>3</sup>Another function of D (Longobardi, 1994:628), and more particularly of the definite article (cf. Szabolcsi, 1994:Sec.6) is that of subordination, i.e. to turn a noun phrase (or other category) into a possible argument. See also Chapter 34 of this volume.

*definite articles* (henceforth DA) and *indefinite articles* (henceforth IA). DA and IA have in common that they are typically phonologically weak, i.e. unstressed and monosyllabic (Lyons, 1999:65 and 90), that they mark (in)definiteness, and that both are called “article”. But while traditional terminology suggests a category of articles with definite and indefinite variants, the idea that in the grammar DA and IA form a natural class/pair is misleading (cf. Himmelmann, 2001, Dryer, 2007). Indeed, a look at the WALS chapters 37 and 38 (Dryer, 2013a,b) suggests that whether a language has a DA and how it is expressed does not seem strongly correlated with its having an IA and how it is expressed, and vice versa. While identifying DAs and IAs cross-linguistically is not a trivial matter, their respective cross-linguistic distribution and language-particular morphological status are clearly not isomorphic. The categorial differentiation of DA and IA will be a running theme of the present chapter.

Turning to the term *morphology*, by it we usually mean “the study of the grammatical structure of words [...] the categories realized by them” (Matthews, 2014:252), and the forms realizing them. By *morphology of articles* we, hence, mean something like the study of the grammatical structure of words or parts of words whose basic role is (related to) that of marking (in)definiteness. The chapter deals with a diverse set of languages and a modest number (per language) of closed class (and semi-open class) elements, however. And it will prove useful to allow for the detection of relevant units that would escape our attention on certain traditional criteria for segmentation such as the Greenbergian square (Greenberg, 1957:20ff.). It will also be useful not to attach any significance to the notion of “word” (cf. Haspelmath, 2011, Newell et al., 2017), but to allow for a smooth integration of what some might distinguish as morphological and syntactic structure.

Languages vary with regard to their marking of definiteness (Lyons, 1999, Dryer, 2013a). Definiteness (and perhaps indefiniteness) may be overtly signalled by free form articles, affixal articles, other determiners, specific inflectional forms of the noun<sup>4</sup> or a modifier, by the position of the noun relative to other morphemes in the noun phrase, by the position of the noun phrase in the clause, by a combination of expression-side effects, or not at all. This chapter focuses primarily on expression by a segmentable piece.

Although according to Lyons (1999:67) definite articles are rather typically invariable, they not uncommonly do associate with other grammatical categories of their context/environment, including grammatical gender/class, number, and case (e.g., *-er* of German *der* ‘DEF.M.NOM’). This constitutes what I will call the *I-domain* of the article (with *I* as in *inflection*).<sup>5,6</sup> I will distinguish it from the *C-domain* of the article (with *C* as in *core*, *content*, and CP, cf. Szabolcsi, 1994, Rizzi, 1997, Cardinaletti and Starke, 1999), designating the morphological categories that realize discourse-referentially contentful features, i.e. the article in the narrow sense (e.g., *d-* of German *der*). The article in the traditional sense (e.g., German *der*) hence is a segmentally separable morphological conglomerate consisting of an article in the narrow sense (i.e. the C-domain) and the grammatical categories it associates with (i.e. the I-domain). Just as there are articles without overt I-material, there seem to be articles without overt C-material, as we will see especially in Section 4.

<sup>4</sup>This may include tonal contrasts as, e.g., in the Mande language Bambara (Hyman and Leben, 2000:592), or the Bantu languages of the Myene group (B10 in the Guthrie classification, cf. Nurse and Philippson, 2003), where “the opposition definite vs. indefinite is expressed by means of the tones on the nominal form” (Grégoire, 2003).

<sup>5</sup>I do not mean to suggest that I-material may not be semantically significant in any way.

<sup>6</sup>I will follow Dixon (2004:Ch.10) in distinguishing gender and noun class in a way that reserves the former to semantically based third person pronoun systems with no concord/agreement effects (e.g., English), and uses the term *noun class* for grammaticalized noun categorization devices that participate in concord/agreement (as found in Bantu languages, Australian languages, as well as in Indo-European, e.g., German and French).

The chapter is organized as follows. Section 2 details aspects of article inflection in German, noting an asymmetry between DA and IA. Section 3 contrasts DA and IA with regard to their respective primary trans-categorial affiliations. Section 4 discusses indirect/secondary signalling of definiteness by means of noun class markers and classifiers, hypothesizing non-overt DAs and IAs. Section 5 addresses the (morphological and syntactic) structural affiliations of the articles, contrasting the DA's promiscuity with the IA's rigidity. Section 6 deals with co-occurrence interactions of articles and case/prepositions, contrasting DA and IA. Section 7, finally, concludes the chapter.

## 2 Inflection: DA vs. IA

The most important criteria for identifying a category relate to its inflectional and positional properties and syntactic function (Knobloch and Schaefer, 2000). In this section, I will address the question of inflectional properties distinguishing DA and IA explicitly.

When comparing inflectional properties of categories we may distinguish sensitivity to categories from exponence thereof; and within exponence we may distinguish simple contrast in form from complexity; and within complexity we may further distinguish simple paradigmatic complexity from structural complexity. In some languages at least, the DA's I-domain is more complex than the IA's on every one of those counts.

### 2.1 Inflectional sensitivity and complexity

In Indo-European languages, the DA and IA commonly associate with noun class morphology. In fact, the articles are sometimes termed *Geschlechtswörter* 'gender words' in German (e.g., in Weber, 1964:101). In German (Germanic) and Spanish (Romance), for example, the I-domains of both DA and IA are sensitive to this category. However, sensitivity to categories is a weaker criterion than exponence. The latter implies (except for syncretism and allomorphy), and is therefore stronger than the former. To illustrate, consider the nominative forms in (1).

(1)	M.SG.	F.SG	N.SG	PL	German
DA:	d-er	d-ie	d-as	d-ie	
IA:	ein	ein-e	ein	Ø	

Both the DA and the IA exhibit sensitivity to class and number, but they are distinct in the way the features are exponed. This is (to a lesser degree) similar in Spanish (2), where suffixal exponence is identical in DA and IA, including the regular plural suffix *-s*, but the M.SG DA has a prefixal *e-* not present in the IA.

(2)	M.SG	F.SG	M.PL	F.PL	Spanish
DA:	e-l	l-a	l-os	l-as	
IA:	un	un-a	un-os	un-as	

The Spanish example suggests looking not only for distinct exponence but furthermore for distinct levels of structural complexity (in exponence), in particular distinct numbers of positions (pre- and/or suffixal). In fact, a closer look at German, too, reveals a higher complexity in the DA's relative to the IA's I-domain.

Consider (3). The German articles and pronouns are sensitive to the language's four-way case system, both exhibiting up to all four case distinctions (traditionally analyzed in a class+number+case portmanteau

fashion). A comparison with the 3SG pronominal forms illustrates that the vowels of the DA (at the very least *-a-* and *-ie*) and the consonants function as separate morphemes.<sup>7</sup>

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In other words, the German DA *d-* can be analyzed as being (typically) accompanied not by one but by two inflectional suffixes: one vocalic and one consonantal.<sup>8</sup> Hence there is a vocalic three-way gender contrast in the DA inflection: *e-a-i*. There is no vocalic three-way contrast present in the IA, and the IA's overt consonantal paradigm is a proper subset of the DA's, suggesting that DA inflection is structurally more complex than that of the IA. In fact, the DA seems to combine more than one class-sensitive morphological agreement system, where the IA has only one.<sup>9</sup>

Other, perhaps more surface apparent candidates for a DA vs. IA contrast in I-domain complexity are found, e.g., in Mayan and Siouan languages as will be illustrated in Section 4.<sup>10</sup>

## 2.2 Declensional effects

A curious set of facts is related to the impact which the DA vs. IA contrast seems to have on adjectival agreement in German(ic) (Bierwisch, 1967, Milner and Milner, 1972). In German, a three-way adjectival declension is sometimes distinguished (Zwicky, 1986), though the data structure is a matter of debate (cf. Müller, 2002, Leu, 2015a, Roehrs and Julien, 2014, Roehrs, 2015). The choice of declension correlates with the choice of determiner (in the broad sense). Consider the masculine singular nominative (4) and dative (5) examples.

(4)	a.	d-er	gute	Wein	(5)	a.	d-em	guten	Wein	German
		the-NOM	good.WK	wine			the-DAT	good.WK	wine	
		'the good wine'					'the good wine'			
	b.	gut-er	Wein			b.	gut-em	Wein		
		good-NOM	wine				good-DAT	wine		
		'good wine'					'good wine'			
	c.	ein gut-er	Wein			c.	ein-em guten	Wein		
		a good-NOM	wine				a-DAT	good.WK	wine	
		'a good wine'					'a good wine'			

<sup>7</sup>I take a comparison with personal pronouns to be warranted, cf. Postal's (1966) classic proposal for English that pronouns are a kind of determiner.

<sup>8</sup>It is further possible that the vocalic suffix expresses class/number only, whereas the consonantal suffix is sensitive to both class/number and case (Leu, 2015a:Ch.8). In genitive and dative case, the vowel contrast is neutralized across the three classes.

<sup>9</sup>The argument from inflectional complexity may, of course, be close to that from structural affiliation discussed in Section 5.

<sup>10</sup>The discussion here is restricted to I-domain complexity. However, the DA vs. IA complexity contrast may go beyond I-material. In Tzeltal (Mayan), for instance, the noun phrase initial "[d]efinite articles frequently come with a final-position enclitic =e or =i, creating a discontinuous determiner" (Polian, 2017b:621). I am not aware of a discontinuous IA.

After DA, (a), adjectives inflect according to, what is called, the weak paradigm (cf. Grimm, 1819), glossed as WK. In the absence of an overt determiner, (b), adjectives inflect according to the so-called strong paradigm (strong in that it makes more paradigmatic distinctions). After the IA, (c), however, adjectives exhibit a mixed declension, which is that of the strong paradigm in nominative and accusative and that of the weak paradigm in dative and genitive environments. These declension facts add to the argument that the DA and the IA are distinct categories (cf. also Section 5.2).

Perhaps equally interesting is the fact that a broader look at German adjectival declension provides evidence that the *ein* found in complex determiners is morphosyntactically isolable and corresponds to *ein* of the IA. That is because adjectives also inflect in this same mixed fashion after all other determiners that morphologically contain *ein*, which includes *kein* ‘no’, as well as the semantically definite possessive determiners *mein* ‘my’, etc. We will briefly come back to the role of DA and IA in complex determiners and in adjectival modifiers in Section 5. First, however, let us turn to more general concerns of their trans-categorical affiliations.

### 3 Trans-categorical affiliation: DA vs. IA

Another argument against a category *article* subsuming DA and IA may be based on their distinct trans-categorical affiliations and, relatedly, their distinct typical diachronic origins.

#### 3.1 DA and demonstrative

There are languages in which the DA seems to be morphologically identical to or contained in a demonstrative (cf. also Chapter 31 of this volume). A plausible example of morphological containment is (6a) from the Oceanic language Loniu (taken from Hamel, 1994:100, 114), which Dryer (2013a) gives as an example where the DA is distinct from the demonstrative (but apparently identical to the 3SG personal pronoun, cf. 6b).

- |     |  |  |       |
|-----|--|--|-------|
| (6) | a. iy amat iyo<br>the man this<br>‘this man’ | b. iy ilos<br>3SG 3SG.fall<br>‘He fell.’ | Loniu |
|-----|--|--|-------|

Other candidates include Germanic, e.g., English *th(e)* in *this*, *that* (Chomsky, 1995:383) and German *d-* (Leu, 2007, 2015a), as well as Mayan, e.g., Ch’ol *li* ‘the’ in *ili* ‘this’ (Vázquez Álvarez, 2011:169).

The diachronic correlate of this containment relation is part of the definiteness cycle (Greenberg, 1978, Lyons, 1999, Diessel, 1999, Himmelmann, 2001, Van Gelderen, 2007), by which the DA diachronically derives from a former demonstrative, e.g., the Romance DA *l-* from the Latin distal demonstrative *ille* (Rainer, 2004), or the Hungarian (Uralic) DA *a(z)* from demonstrative *az* ‘that’ (Szabolcsi, 1994:184). This is not restricted to free forms. The Basque suffixal (or enclitic) article *-a*, for example, historically derives from the post-nominal demonstrative *ha* (Manterola, 2012). See also Chapter 10.

Sometimes, the DA vs. demonstrative contrast corresponds to a positional difference on the expression side (as already 6a). For example in Ute (Uto-Aztecan) “the same lexeme functions as a distal demonstrative when it precedes the noun and as a definite article when it follows the noun” (Dryer, 2007:155).

- |     |   |                                       |     |
|-----|---|---------------------------------------|-----|
| (7) | a. 'ú ta'wáci<br>that man<br>'that man' | b. ta'wáci 'u<br>man DEF<br>'the man' | Ute |
|-----|---|---------------------------------------|-----|

Sometimes, the distinction between DA and a demonstrative is a matter of stress (e.g., German *der*), and sometimes there is no overt distinction. An example of the latter is, according to Dryer (2007:154ff.), the form *an* in the Austronesian language Takia of Papua New Guinea, which covers a range of meanings that “includes that of [(medial)] demonstratives and definite articles in other languages” (ibid.).<sup>11</sup>

Let us retain that principled morphological similarity between DA and a demonstrative is rather common. I am not aware of a case, however, where this could be said of an IA.

### 3.2 IA and numeral ‘one’

The IA, too, has a go-to category which it is often (“seemingly universal[ly]”, cf. Givón, 1981) diachronically derived from and/or formally related to and sometimes even indistinguishable from, namely the numeral ‘one’ (Dryer, 2013b). Such is the case, e.g., in the West Papuan language Hatam *gom* ‘one / a certain / one or another’ (Reesink, 1999:59), in Turkish *bir* ‘a/one’ (Kornfilt, 1997:275), in Diidxazá (Zapotecan) *ti* ‘a’ (cf. *tobi* ‘one’ Pickett et al., 2001:46), in German *ein* ‘a/one’, and in French *un* ‘a/one’, which derives from the Latin numeral *unus* ‘one’ (Rainer, 2004:1700). This, too, is not restricted to free forms. Baxoje-Jiwere (Siouan), for instance, has suffixal IAs derived from the word for ‘one’ (cf. Greer, 2016:214). And in the Amazonian Arawak language Tariana, the general indefinite *pa:-* is also used as ‘one’ (Aikhenvald, 2003:215).

Among the many cases of phonetic similarity between an IA and the numeral ‘one’, it is not uncommon that the former is somewhat reduced (e.g. unstressed), for instance in German or Thai (cf. Piriawinboon, 2010:48ff.); and/or that they occur in distinct positions, as exemplified in (8) from Turkish (Kornfilt, 1997:106).

- |     |  |  |         |
|-----|--|--|---------|
| (8) | a. bir güzel, olgun elma<br>one nice ripe apple<br>'one nice ripe apple' | b. güzel, olgun bir elma<br>nice ripe an apple<br>'a nice, ripe apple' | Turkish |
|-----|--|--|---------|

In various languages where numerals are accompanied by numeral classifiers, the combination ‘one’+classifier serves the function of IA, e.g., in Ch’ol (Mayan) *juñ tyikil wiñik* ‘one-CL man’, i.e. ‘a man’ (Vázquez Álvarez, 2011:170, cf. also Section 4.4).

While the numeral ‘one’ expresses singular cardinality, the same form, qua IA, can, in some languages, be pluralized (cf. Himmelmann, 2001:838). Amharic (Semitic), for instance, can use the free form numeral *and* ‘one’ in pre-nominal position to mark specific indefinites, in particular human topics (Hudson, 1997:464). The reduplicated form, *andand* ‘some’, serves to express non-specific plural. Similarly,

<sup>11</sup>Ross (2011:225) points out that Takia *an* never registers (what Hawkins, 1978, calls) larger situation definites (e.g. *the moon*), but only anaphoricity, and concludes, referring to Himmelmann (1997:41), that it should therefore not be considered a DA. However, WALS (Dryer, 2013a) follows a more inclusive approach, explicitly mentioning “definite articles [which] appear to be restricted to anaphoric usage” as found, e.g., in the Northern Australian isolate Mangarrayi. This contrast is related to the distinction between what is sometimes called weak DA and strong DA (cf. Schwarz, 2009, Jenks, 2015).

Q'anjob'al (Mayan) has an IA *jun* (homophonous with the numeral 'one') and a reduplicated plural form *junjun* thereof (Baquix Barreno et al., 2005:99). In some languages the numeral-derived IA can combine with a regular plural marker, as was noted around (2) for Spanish. Another example is Fongbe (Kwa), where the IA *dé*, "presumably a reduced form of the numeral *ódé* 'one'" (Lefebvre and Brousseau, 2002:40) is compatible with a plural morpheme giving rise to sequences such as *àsón dé lɛ* (N-IA-PL) with the meaning 'some (specific) crabs'.

Let us retain that principled morphological similarity between IA and numeral 'one' is rather common. I am not aware of a case, however, where this could be said of a DA.

## 4 Noun class markers and classifiers: I-qua-C

The typical diachronic origins and synchronic containment relations of the articles mentioned in Sections 3.1 and 3.2 are primarily cases of C-material affiliation. On another grammaticalization path, unit counters evolve into classifiers and eventually become noun class or gender markers (Craig, 1986:243, cf. also Dixon 1986), which we are calling I-material. "The use of classifiers correlates with referentiality, specificity, definiteness, topical continuity, and the salience in discourse of the noun" (Aikhenvald, 2000:333). But the patterning of (different languages and) different classifier types is not uniform in this regard. It may be useful to distinguish between noun class markers (henceforth NCM), noun classifiers (henceforth NCL), and numeral classifiers (henceforth NumCL), *ibid.* p.13ff. "Noun classes comprise a closed grammatical system, generally with between two and about five members (exceptionally, one may encounter ten or twelve noun classes in a language). In contrast, [noun and numeral] classifiers comprise a semi-open class; it is often impossible to be certain that one had assembled a complete list of classifiers" (Dixon, 2004:450).

Regarding definiteness marking, it is interesting to note that "[g]eneric noun classifiers tend to correlate with definite referents, while numeral classifiers are often used to introduce a new referent" (Aikhenvald, 2000:333). This is, at some level of abstraction, a variant of the affinity between the IA and the numeral 'one' (cf. Section 3.2). In this section we will address noun classifiers (4.1), and noun class markers (4.2), point out a relevant similarity between Bengali and Swedish (4.3), then address numeral classifiers (4.4), and combined systems (4.5), all with an eye on definiteness marking. The gist of that discussion will be that noun categorization devices can function as article I-material, licensing the inference of the structural presence of an article's C-domain. In Section 4.6 finally, we will inspect some morphological properties of articles with proper names.

### 4.1 Noun classifiers as I-qua-C articles

Let us first consider NCL. They are characteristic for Meso-American languages (Craig, 1986, Grinevald, 2004). Q'anjob'al (Q'anjob'alan, Mayan), for example, has an NCL system with four classifiers for human referents, distinguishing gender and age / social status; and ten classifiers for non-human referents, based on physical properties, substance, and origin (Mateo Toledo, 2017:545ff.). When accompanying the noun the choice of NCL contributes to the interpretation of semantically underspecified nouns as in (9-10, from Zavala 1992:164ff.), and in certain contexts "the classifier functions [...] in the manner of Indo-European style weak deictics – definite articles" (*ibid.* p.160).<sup>12</sup>

<sup>12</sup> "[E]l clasificador funciona [...] a la manera de los deícticos débiles de las lenguas indoeuropeas – artículos definidos" (my translation, TL).

These NCL share their syntactic distribution: they can stand alone with their referent noun and they can serve as anaphoric pronouns (Grinevald, 2004:1021), but they do not share a phonological segment, i.e. the shared DA function does not have a corresponding overt expression.

- (9) a. *teʔ lemoniʃ*  
CL:WOOD lime  
'the lime tree'
- b. *ʔan lemoniʃ Q'anjob'al*  
CL:FRUIT lime  
'the lime'
- (10) a. *nax kaanalom*  
CL:MALE.PERSON dancer  
'the dancer' (male)
- b. *ʔiš kaanalom*  
CL:FEMALE.PERSON dancer  
'the dancer' (female)

Jacalteco (another Q'anjob'alan Mayan language) has 24 NCL, to a large extent cognate with the ones of Q'anjob'al (cf. Craig, 1986:245 and Zavala, 1992:152), but somewhat more grammaticalized (cf. Craig, 1986:262). Again, they do not all share a phonological segment, but they share their syntactic distribution and the fact that they can be used as anaphoric pronouns (Grinevald, 2004:1021) and that (under the right circumstances) their presence marks definiteness (Craig, 1986:270).

- (11) a. *xil naj xuwan no' lab'a* Jacalteco  
see.PAST CL.man John CL.animal snake  
'John saw the snake.'
- b. *xil naj no'*  
see.PAST CL.man CL.animal  
'he saw it (animal)'

However, these NCL can co-occur with the IA *hune7* (which is homophonous with the numeral 'one') in the order *hune7* (+ classifier) + *N* (cf. Craig, 1986:271), suggesting that the classifier itself is not definite. Thus it appears that it is the classifier's structural presence which (in the absence of 'one') allows the inference of a DA.<sup>13</sup>

This may be, in part, structurally analogous in Dhegiha (Siouan) languages, which have "as many as eleven definite/specific articles [also called *deictic classifiers* (Aikhenvald, 2000:176ff.)] indexing features such as animacy, proximity/obvation (or case), posture/position, number, visibility, motion and dispersion" (Rudin and Gordon, 2016:xii). Omaha (Dhegiha, Siouan), for instance, has the seven animate forms *ak<sup>h</sup>a*, *ama*, *thi<sup>n</sup>k<sup>h</sup>e*, *tho<sup>n</sup>k<sup>h</sup>a*, *t<sup>h</sup>o<sup>n</sup>*, *thi<sup>n</sup>*, *ma* and the four inanimate forms *t<sup>h</sup>e*, *k<sup>h</sup>e*, *tho<sup>n</sup>*, *ge* (Eschenberg, 2005). While these forms do not all share a common phonological segment, they all seem to mark identifiability (judging from Eschenberg's Chapter 4.6 description) when enclitic to a noun phrase. These forms may be analyzed as NCL whose presence licenses a non-overt DA.

<sup>13</sup>Mayan is not uniform regarding co-occurrence patterns of 'one' and types of classifiers. In Akatek (the variety of Western Mayan Q'anjob'al described in Zavala, 1992:136ff.) and in K'iche' (Eastern Mayan, described in Can Pixabaj, 2017:471), for example, the numeral 'one' as IA can directly combine with the noun (*xun winax* 'a/one man'; *jun achi* 'a man', respectively). In Ch'ol (Western Mayan, like Q'anjob'al and Jacalteco), on the other hand, *juñ* 'one' requires the company of a NumCL *juñ-tyikil wiñik* 'a man' (Vázquez Álvarez, 2011:169ff.). Ch'ol only has vestiges of the Mayan NCL system, and can use determiners to mark definiteness (ibid. p.353).



As in the Q'anjob'al examples above, they can stand alone with the noun (contrary to typical NumCL, see below); and the choice of NCL is not fully determined by the noun, but contributes to the interpretation of polysemous nouns (contrary to typical NCM, see below). This is illustrated by the following examples from Ponca, a Dhegiha Siouan language with an article system that is largely cognate with that of Omaha. (Examples from Barron and Serzisko, 1982:93, here taken from Aikhenvald, 2000:177ff.)

- (12) a. nî t'e Ponca  
 water ART:STANDING, COLLECTIVE  
 'the water'
- b. nî cǎ  
 water ART:ROUNDED  
 'the handful of water (cupped)'
- c. nî k'e  
 water ART:HORIZONTAL  
 'the (line of) water, the stream'

Again, the presence of these different classifiers has one semantic effect unifying them, namely definiteness. "If the noun is indefinite it is used without an article or *wi*" is used irrespectively of the properties of the referent" (ibid.; cf. also Eschenberg 2005).

The coercive conceptual meaning contribution just witnessed for (some) Mayan and Siouan NCL seems similar to that of Mandarin (Chinese, Sino-Tibetan) sortal classifiers (cf. Huang and Ahrens, 2003, Ahrens and Huang, 2016). An important difference between the former and the latter, however, is that the latter (Mandarin classifiers) do not give rise to a definite interpretation (cf. Huang and Ahrens 2003:364 note 4, Wu and Bodomo 2009).<sup>14</sup> They are a subtype of NumCL (Grinevald, 2004:1020), which will be briefly addressed in Section 4.4.

However, there are Southeast Asian classifier languages whose classifiers appear to give rise to definite interpretations, including Hmong (Hmong-Mien), Nung (Sino-Tibetan), and Vietnamese (Austroasiatic), cf. Simpson (2005:823ff.). In Vietnamese, "[c]onstructions of the type 'classifier-noun' [as in (13a), which according to Löbel (1996) can be analyzed as either (13b) or (13c), hence] are systematically ambiguous with regard to definiteness vs. indefiniteness" in the written form (Bisang, 1999:146).

- (13) a. tôi mua qua cam Vietnamese  
 I buy CL orange  
 'I buy the orange. / I buy an orange.'
- b. tôi mua (một) qua cam c. tôi mua [qua cam]  
 I buy one CL orange I buy fruit orange  
 'I buy an orange.' 'I buy the orange.'

In speaking, however, such sequences are not ambiguous, since in (b) the classifier has weak stress, whereas in (c) it bears main stress (ibid. p.147). Vietnamese can also use a second, general classifier (or focus marker, cf. Hùng Tuong, 2013:67), "specifically associated with [a] definite interpretation of the DP", preceding a regular classifier (14, from Le, 1968, cited in Simpson, 2005:825ff.).

<sup>14</sup>See Cheng and Sybesma (1999, 2005), Wu and Bodomo (2009), Jenks (2015) for a debate on the determiner status of classifiers in several Chinese varieties.

- (14) Cai con dao [anh cho toi muon], no that sac. Vietnamese  
 CL CL knife you give me borrow it real sharp  
 ‘The knife you gave me is really sharp.’

“Although Vietnamese displays lexical items that may serve to contribute to the expression of definiteness, these are not determiners in the technical sense” (Phan and Lander, 2015:395). A possible, perhaps adequate, interpretation of these observations is that the Vietnamese regular classifiers can license two types of structure: one with an optionally covert IA (13b), and one with an optionally covert general classifier which, in turn, (perhaps in combination with the regular one) licenses a covert DA.

## 4.2 Noun class markers as I-qua-C articles

NCM and classifiers are “grammatically quite different but they perform similar semantic and pragmatic tasks within a language [...] providing a categorisation of objects and of cultural ideas concerning them” (Dixon, 2004:451), and functioning “as anaphoric elements for participant tracking” (Aikhenvald, 2004:1041, cf. also Grinevald, 2004, for relevant discussion). “The defining criterion for noun classes is agreement within the same clause” (Dixon, 2004:450).

Consider the Portuguese (Romance, Indo-European) DA forms *o*, *a*, *os*, *as* (Celegatti Althoff, 2007:26ff.), which seem to be reduced to their I-material. This I-material occurs as nominal suffixes, adjectival agreement suffixes, and as free pronominal articles (examples from Aikhenvald, 2000:2).

- (15) a. o                   menin-o                   bonit-o                   Portuguese  
 ART:MASC.SG child-MASC.SG beautiful-MASC.SG  
 ‘the beautiful boy’  
 b. a                   menin-a                   bonit-a  
 ART:FEM.SG child-FEM.SG beautiful-FEM.SG  
 ‘the beautiful girl’

The noun phrase initial NCM in (15a,b) may be thought of as licensing an unpronounced DA (i.e. a non-overt variant of the Romance *l-*), analogous to the Mayan, Siouan, and Vietnamese NCL from Section 4.1.

Perhaps interesting in this context is Zürich Swiss German (cf. Weber, 1964:101,104), where, in non-oblique contexts, the DA consists of overt C- and I-material in its masculine form (16a), of only C-material in its feminine form (17a), and of only class morphology, i.e. I-material, in its neuter form (18a).<sup>15</sup>

- |  |   |   |
|--|---|---|
| <p>(16) a. de       hund<br/>         DEF.M dog<br/>         ‘the dog’<br/>         b. en       hund<br/>         (INDF)M dog<br/>         ‘a dog’</p> | <p>(17) a. d       hand<br/>         DEF(F) hand<br/>         ‘the hand’<br/>         b. e       hand<br/>         (INDF)F hand<br/>         ‘a hand’</p> | <p>(18) a. s       huus   Zürich<br/>         (DEF)N house<br/>         ‘the house’<br/>         b. es       huus<br/>         (INDF)N house<br/>         ‘a house’</p> |
|--|---|---|

<sup>15</sup>Note that the indefinite (b) examples also lack an overt manifestation of the expected C-material of the IA, which is *n* (cf. Section 6.3). The manifestations of the IA are vowel initial, contrary to the manifestations of the DA.

It seems, thus, as though the neuter NCM (i.e. the *s* in 18a) can license a non-overt variant of the DA (in the narrow sense). But that NCM itself is not definite. It is also present in the indefinite (18b), where it is preceded by the vocalic element, and no DA is possible (overt or covert).

There are languages in which NCM are correlated with definiteness, either with or without overt C-material. The Niger-Congo language Gola is an example. Here definiteness seems to be signalled by overt class marking, which in some cases consists of a prefix and a suffix, e.g., *gbalia* ‘a dwarf antelope’; *o-gbalia-a* ‘the dwarf antelope’ (cf. Aikhenvald, 2000:58, 321), i.e. a complex I-domain.

Note that these are the NCM analogue of the pattern with NCL discussed above, where we saw that Q’anjob’alan (Mayan) NCL are I-qua-C DAs, but can also be preceded by ‘one’, thus being part of IA, whereas the Omaha (Siouan) NCL are correlated with a definite interpretation.

### 4.3 Class markers and classifiers – and articles

The morphosyntactic affinity between NCM and classifiers vis-à-vis I-qua-C can be illustrated by a juxtaposition of Bengali and Swedish. Bengali (Indo-Aryan, Indo-European) has the classifiers *ṭa*, *ṭi*, *khana*, *khani* (singular), and *gulo*, *guli* (plural), which, when suffixed to the noun, signal definiteness (Thompson, 2012:53). The default classifier is *ṭa*, exemplified in (19). Lyons (1999:331) describes this as Bengali having an affixal DA. However, the classifiers’ distributional range also includes affixation to the prenominal *æk* ‘one’, in which case the noun phrase is indefinite (19b).<sup>16</sup> While the classifier forms just mentioned invite further segmentation, there is no overt segment that is shared by all the classifiers. What is shared across the different classifiers, however, is the correlation between N-suffixation vs. pre-N ‘one’-suffixation and definiteness vs. indefiniteness (cf. Thompson, 2012:53ff.).

- |      |                                       |   |         |
|------|---------------------------------------|---|---------|
| (19) | a. chele-ṭa<br>boy-CLASS<br>‘the boy’ | b. æk-ṭa      chele<br>one-CLASS boy<br>‘one/a boy’ | Bengali |
|------|---------------------------------------|---|---------|

Bengali (19) is reminiscent of Scandinavian Germanic, exemplified by Swedish (20, cf. Holmes and Hinchliffe, 2013:56ff., 235).<sup>17</sup>

- |      |   |   |         |
|------|---|---|---------|
| (20) | a. hus-et<br>house-CLASS<br>‘the house’ | b. ett      hus<br>CLASS house<br>‘one/a house’ | Swedish |
|------|---|---|---------|

While the suffix in Swedish (20a) is usually glossed or described as a DA, it may, also in view of (19), perhaps more accurately be seen as a NCM instead, with definiteness not a semantic property of that piece, but reflected in the position of the noun relative to that class marker.<sup>18</sup>

<sup>16</sup>In fact, the Bengali classifiers, diachronically derived from a NCM system (cf. Kolver, 1982, but see note 17), also typically attach to numerals (Thompson, 2012:130ff.). They hence have somewhat of a hybrid behaviour between NCL and NumCL.

<sup>17</sup>The parallelism is particularly interesting since the series of classifier suffixes to which the Bengali suffix *ṭa* belongs is “clearly of non-Aryan origin [but] derived from a numeral-classifier system [which is] a prominent feature of mainland Southeast Asian languages” (Masica, 1991:250). Nepali, for instance, has such elements “as numeratives only [...] and never as definite noun suffixes” (ibid. p.370).

<sup>18</sup>Regarding the morphological simplicity of prenominal *ett*, perhaps cf. Section 6.3.

Bengali represents one of two types of definiteness marking in the New Indo-Aryan languages (Masica, 1991:248). The other is the Sinhalese type, in which *-ek* (animate) and *-ak* (inanimate, and sometimes feminine) suffixation marks the noun as indefinite. “Nouns without them are deemed [d]efinite” as in *pota/potak* ‘the book/a book’ (ibid.).

An essentially converse pattern, where definite nouns are class-marked and indefinites are unmarked is also found, for example in Amharic (Kramer, 2009:25) or in the North-American isolate Yuchi. Yuchi has no indefinite or definite article (Linn, 2001:362). But the language has a set of noun class morphemes which “have a [definite] article-like meaning” and “appear to be obligatorily marked on the demonstrative and on the noun itself” (Aikhenvald, 2000:178), in definite noun phrases, while “singular indefinite nouns are unmarked” (Linn, 2001:362ff.).

- |      |    |                  |                  |    |                  |       |
|------|----|------------------|------------------|----|------------------|-------|
| (21) | a. | nɛ-fa            | ya-fa            | b. | ya-fa            | Yuchi |
|      |    | this-CL:VERTICAL | wood-CL:VERTICAL |    | wood-CL:VERTICAL |       |
|      |    | ‘this tree’      |                  |    | ‘the tree’       |       |

#### 4.4 Numeral classifiers and ‘one’-qua-IA

Numeral classifiers (NumCL) are noun categorization devices that have a special bond with numerals (and quantification more generally). In some languages all numerals obligatorily appear with a NumCL (e.g. in Ch’ol, Mayan, cf. Coon, 2017:666), while in others NumCL may be obligatory with small numbers only (Aikhenvald, 2015:108), yet other languages do not have NumCL. NumCL also have a discourse-functional component. In Japanese, Malay (Austronesian), and Burmese (Sino-Tibetan), NumCL “often occur in NPs for initial mentions of referents” (cf. Aikhenvald, 2000:324), hence licensing an IA interpretation.

Of particular interest in the present chapter is the combination with the numeral ‘one’, which may have a special status. In Mandarin Chinese, for instance, the prenominal NumCL can be preceded by a non-stressed variant of the numeral ‘one’ (i.e. *yi*-CL). This combination seems close to the Germanic IA (cf. Cheng and Sybesma 2005:262ff.; Wu and Bodomo 2009:note 9). Alternatively, it is not the combination *yi*+CL, but simply *yi* ‘one’ which can be an IA (Zhang, 2019), in a ‘one’-qua-IA fashion. This may be supported by the fact that the classifier is not always (overtly) obligatory (cf. note 13 on Mayan), as, for example, in (22) from the 9th century A.D. (noted in Schafer, 1948:413; here taken from Bisang, 1999:162).

- |      |                              |     |            |                  |
|------|------------------------------|-----|------------|------------------|
| (22) | yǒu                          | yì  | lǎo-rén... | Medieval Chinese |
|      | there is                     | one | old-man    |                  |
|      | ‘There was an old person...’ |     |            |                  |

But it is sometimes also possible for only the classifier to be present, without overt *yi* (23), which may be looked at as a variant of an I-qua-C IA. Whether in (23) the *yi* is actually structurally absent (Cheng and Sybesma, 1999:525) or only phonetically (Zhang, 2019) is a matter of debate.

- |      |                               |       |     |          |      |          |
|------|-------------------------------|-------|-----|----------|------|----------|
| (23) | Wo                            | xiang | mai | (yi-)ben | shu. | Mandarin |
|      | I                             | want  | buy | (one-)CL | book |          |
|      | ‘I would like to buy a book.’ |       |     |          |      |          |

Not irrelevant is the observation that ‘one’ as numeral and ‘one’-qua-IA are syntactically distinct. Thai, for instance, has an IA which is phonetically similar to the numeral *nung* ‘one’ (differing from it in tone and in stress, cf. Piriyawinboon, 2010:48ff.), but occurs in a distinct syntactic position from that of numerals, including *nung* (Simpson, 2005:826ff.).<sup>19</sup> Numerals precede the classifier (24a), but in (24b) ‘one’ is in final position “coming to be an indefinite determiner that contrasts in its indefinite specification with the definiteness encoded by demonstratives” (ibid. p.828), with which it is in complementary distribution (ibid. p.827).

- |      |   |   |      |
|------|---|---|------|
| (24) | a. dek saam khon<br>child three CL<br>‘three children’<br>b. dek khon nung<br>child CL one<br>‘one/a child’ | c. dek nung khon nii<br>child one CL Dem<br>‘this one child’<br>d. *dek khon nung nii<br>child CL one Dem | Thai |
|------|---|---|------|

In Thai and Mandarin definite noun phrases may occur as bare nouns, or with (a classifier and) a demonstrative (examples from Cheng and Sybesma, 1999:510, 527, and note 17, where an analysis of *zhei* as *zhe*+*yi* ‘zhe+one’ is suggested).

- |      |  |          |
|------|--|----------|
| (25) | a. Gou yao guo malu.<br>dog want cross road<br>‘The dog wants to cross the road.’<br>b. zhei ben shu<br>this CL book<br>‘this book’<br>c. zhe san ben shu<br>these three CL books<br>‘these three books’ | Mandarin |
|------|--|----------|

The two forms (bare and with demonstrative) contrast different semantic types of definites (Jenks, 2015), not unlike weak vs. strong definites in German (Schwarz, 2009), distinguishing types of uniqueness and familiarity (cf. also Chapters 12 and 14 of this volume).

Unlike Mandarin, Cantonese Chinese uses CL+N sequences for certain types of definites. In fact, Cheng and Sybesma (2005:281) propose that overt classifiers in Cantonese and other varieties have “exactly the same function as determiners like English *the*.”<sup>20</sup> Though that claim seems too strong, for instance because, post-verbally, Cantonese CL+N also allows an indefinite interpretation (as in 26b, cf. also Cheng and Sybesma, 1999:524).

<sup>19</sup>It is not uncommon for numeral ‘one’ to differ in its morphological and syntactic behaviour from other cardinals, e.g., in Hebrew (Semitic, Borer, 2005:193ff.) or Q’anjob’al (Mayan, Zavala, 1992:136ff.), cf. note 13.

<sup>20</sup>The examples in (a) illustrate CL+N for specific definites: immediate situation definites as in (26a), from Cheng and Sybesma (1999:511), and associative definites, in preverbal subject position, as in (26b), from Bisang (1999:157), identified as colloquial. According to Jenks (2015:111), Cantonese allows bare nouns for non-specific definites, where English still uses *the*.

- (26) a. Zek gau gamjat dakbit tengwaa. Cantonese  
 CL dog today special obedient  
 ‘The dog is especially obedient today.’  
 b. ngo<sup>5</sup> yeo<sup>5</sup> ji<sup>1</sup> bed<sup>1</sup>, ji<sup>1</sup> bed<sup>1</sup> hou<sup>2</sup> huei<sup>3</sup> ga<sup>3</sup>.  
 I have CL pen CL pen very expensive PART  
 ‘I have a pen, the pen is very expensive.’

Note how the (lack of certain) co-occurrence restrictions and the relation to definiteness of the classifiers in Cantonese (26), as compared to Mandarin (25), makes them look not unlike the Jacalteco NCL and the Swiss German NCM discussed in Sections 4.1 and 4.2, respectively.

A third (superficially different) pattern obtains in the Hmong-Mien language Miao of Weining (spoken in the Chinese province of Guizhou), in which “the classifier seems to display referentiality as its primary function” (Bisang, 1999:153). Miao of Weining classifiers have a basic form (CV plus tone). They also have a definite and an indefinite form derived from the basic form through a vowel change. The derived forms both have (the same) two vowel variants (expressing normal size and diminutive, respectively). But while the definite form retains the tone of the basic classifier form, the indefinite form further changes the tone to a high rising tone (ibid.). Consider the schema with the example classifier *lu*<sup>55</sup> (ibid.).

(27)	Basic form	(CV+T)	lu <sup>55</sup>	Miao of Weining
	Definite form	(C[ae]+T)	lae <sup>55</sup>	
	Indefinite form	(C[ae]+ <sup>35</sup> )	lae <sup>35</sup>	

Again, there is a clear sense in which this resembles what we saw for Jacalteco in Section 4.1, where we noted, following Craig (1986), that *classifier* + *N* licenses a definite interpretation, while the addition of *hune7* ‘one’, *hune7* + *classifier* + *N*, gives rise to an indefinite interpretation. This suggested that *classifier* + *N* itself was not per se definite, but was able to license a silent DA (in the absence of *hune7*). Following the same reasoning, the form *lae*<sup>55</sup> is not itself definite but may license a silent DA in the absence of the change in tone which derives the indefinite form.

We may now make three generalizing conjectures regarding NumCL, NCL, and NCM relative to definiteness. First, such noun categorization devices license a (possibly non-overt) DA, provided that no numeral intervenes. Secondly, NumCL distinguish themselves from NCL and NCM in requiring such a numeral.<sup>21</sup> And third, once a numeral is present, it may take a demonstrative to achieve definiteness.<sup>22</sup>

#### 4.5 Combined classifier systems

While typical NumCL are always accompanied by a numeral, quantifier, or demonstrative (cf. Cheng and Sybesma, 1999:530), “[n]oun classifiers occur independently of the presence of other modifiers in a noun phrase. Quite a number of languages have numeral classifiers, and noun classifiers as separate systems” (Aikhenvald, 2000:90), which may be analogous to languages having both an IA and a DA. As examples of languages with both types of classifiers, Aikhenvald (ibid.) mentions Minangkabau (Malayo-Sumbawan,

<sup>21</sup>NCL and NCM seem to be parametrically ambivalent as to whether they tolerate such a numeral.

<sup>22</sup>Indeed, in Northern Swedish (Vangsnes, 1999:138) and in Swiss German (Leu, 2015a:78), definite noun phrases with cardinal numeral modifiers, e.g. the counterparts of English *the three roses*, require an initial demonstrative (as opposed to plain definites such as *the roses*). However, examples like English (or Q’anjob’al, 29) do not seem to readily adhere to this generalization, unless, of course, *the* turns out to be structurally demonstrative-like.

Austronesian), which according to WALS has neither DA nor IA; and Akatek (Q'anjob'alán, Mayan), whose "noun classifiers (NCL) function as definite articles and the numeral *jun* 'one' as indefinite article" (Schüle, 2000:120).<sup>23</sup>

- |  |  |        |
|--|--|--------|
| (28) a. te' kaxha ti'<br>NCL box DEM<br>'that box' | b. hun sab'eal<br>one gift<br>'a gift' | Akatek |
|--|--|--------|

In Minangkabau, "the two sets [of classifiers tend to] differ in a number of properties such as anaphoric usage [(NCL)] and obligatoriness [(NumCL)]" (Aikhenvald, 2000:90). In Akatek, NCL and NumCL have different morphological profiles. The set of NCL contains 14 non-affixal optionally pre- or pronominal morphemes, whereas the set of NumCL contains three monomorphemic suffixes and about a dozen members composed of a positional root of the form CVC and a derivational suffix *-an* (cf. Zavala, 1992:139ff., 151ff.; Aikhenvald, 2000:187ff.).

Q'anjob'al combines a NCL system, a NumCL system, and a semi-open class of sortal classifiers, all three of which can occur in a single noun phrase (29, from Mateo Toledo, 2017:546).

- |   |            |
|---|------------|
| (29) te ox-eb' jilan si'<br>CL:WOOD three-CL:INAN SORT:LONG firewood<br>'the three long pieces of firewood' | Q'anjob'al |
|---|------------|

To the extent that noun classification systems of individual languages are dots in flux on a typological continuum, with different grammaticalization paths leading from, e.g., lexical nouns to classifiers, and ultimately to class/gender systems (cf. Grinevald, 2004), the existence of combined classifier systems may shed light on the contrast in inflectional complexity between the DA and the IA in German (cf. Section 2.1) in the following way. On the one hand, we have seen that NumCL accompany numerals including 'one' (giving rise to IA), as well as quantifiers and demonstratives, the latter giving rise to deictic or anaphoric reference (Jenks, 2015), by and large akin to DA. On the other hand, we have seen that NCL may mark definiteness in a way akin to DA (albeit in an I-qua-C fashion). It is now possible to extrapolate from these patterns a hypothetical combined noun class system with reflexes of both the NumCL-derived inflection and the NCL-derived inflection on definites (DA), but only NumCL-derived inflection on indefinites (IA). Such a system would share structural aspects of its article morphology with that of German, as discussed above, where DA inflection is more complex than IA inflection.

#### 4.6 Personal articles

In a divers set of languages an overt DA is used with proper names (Ghimeshi and Massam, 2009; cf. also Chapter 23 of this volume). When the article used with proper names is morphologically distinct from the regular DA, we speak of a special *personal article* (PA). There seem to be only definite PAs,<sup>24</sup> and there seems to be some connection between PAs and personal pronouns.

<sup>23</sup>Schüle (ibid.) translates (28a) as 'the box', but calls *ti'* a distal demonstrative (ibid. p.153).

<sup>24</sup>Things are not trivial though. The feature [proper] (and the concomitant feature [name]) blurs the (perhaps artificial) line between C-properties and I-properties, cf. Ghimeshi and Massam (2009). Its relation to definiteness remains to be understood more precisely (cf. Massam et al., 2006).

An example of a language with PAs is Catalan (Romance, Indo-European, Wheeler et al., 1999:67ff.). In Catalan, the regular singular DA forms are masculine *el* and feminine *la* before consonant and *l'* before vowel.<sup>25</sup> Varieties spoken on the Balearic Islands have the special PA forms masculine *en*, feminine *na*, and *n'* before vowel, used with person names. Here the I-material/domain of the article remains unaffected by the DA vs. PA distinction, and the contrast is morphologically restricted to the C-domain. The DA vs. PA contrast can, however, sometimes make I-domain distinctions. This is the case in a more general pattern found in Catalonia which exhibits a class contrast whereby the special PA form *en* is used with masculine names, but the regular feminine DA form *la* is used with feminine names.<sup>26</sup>

Zooming out from Catalan to human languages more generally, we recognize that PAs are a globally rather common phenomenon. Oceanic languages, for instance, often distinguish PAs from common noun DAs, e.g., Fijian *na koro* 'DA village', *o Tomasi* 'PA Thomas' (Lynch et al., 2011:38).

A comparative perspective reveals that languages differ in the way DAs vs. PAs morphologically integrate with related categories, in particular with the PERSON system. Take Hiligaynon, an Austronesian language of the Philippines which has a specialized PA to go with proper names (Wolfende, 1971:62ff.): *si Jose* 'PA Jose' and the plural form *sanday Jose* 'Jose and those with him'. The PA and its plural morphology seem unrelated to the regular DA variants *ang saging* 'the banana' and *ang manga saging* 'the bananas'. Remarkably, the PA, not the regular DA, seems morphologically contained in the 3rd person pronoun forms *sia* 'he' and *sila* 'they' (ibid. p.65), suggesting a morphologically relevant connection between proper names and pronouns. Similar is another Austronesian language, Yapese, which has a pronoun *i* 'he/she' and a PA *ii* that (optionally) precedes proper names for persons (Jensen, 1977:171).<sup>27</sup>

Interesting in this context is a look at Mayan.<sup>28</sup> Lyons (1999:123) notes that Q'eqchi' (K'ichean, Eastern Mayan) has the DA *li* with all common nouns, but with personal proper names it has distinct forms for male and female referents: *laj Manu'* and *lix Rosa* (cf. Eachus and Carlson, 1980). Note that all three forms have an initial *l-*, suggesting that Q'eqchi' PAs are complex: *l-aj* and *l-ix*, decomposing into I-material *aj* and *ix*, and C-material *l-* of the DA *li* (which is also found, e.g., in the Yucatec DA *le*, cf. note 30; in the Ch'ol demonstrative *ili*, mentioned in Section 3; and plausibly in the Q'anjob'al demonstrative reinforcer *la*, cf. Baquix Barreno et al., 2005:101).<sup>29</sup> The morphemes *aj* and *ix* derive from old Mayan roots (*7aj* and *7ix*) for male and female referents, respectively (cf. Kaufman, 2003:80, 83). In Q'eqchi', *aj-* also occurs as a prefixal nominalizer (cf. Tema Bautista and Cuz Mucú, 2004). In fact, the prefix *7aj-* is found in most Mayan languages as a derivational device, deriving, e.g., demonyms and agent nominals (cf. Polian, 2017:215; also Hofling, 2017, section 3). This is reminiscent of German *-er* in, e.g., *Berlin-er* 'from/of Berlin', and *Arbeit-er* 'work-er', which is homophonous with the I-material of the 3.SG.M.NOM DA *der*, cf. note 27, and with the 3SG.M.NOM personal pronoun *er* 'he' (cf. Wiltschko, 1998).

The initial *l-* of the Q'eqchi' DA *li* and PAs *laj*, *lix* is remarkable. In contrast to, e.g., Romance or Zayse (Omotic), which has a DA series that is formally related to 3rd person pronouns (cf. Hayward, 1990b:266ff.,

<sup>25</sup>Hence the class contrast is neutralized in pre-vocalic contexts.

<sup>26</sup>Class sensitivity in the (use of) DAs with proper names is also found, e.g., in Italian and German (cf. Lyons, 1999:121).

<sup>27</sup>Yapese also has other articles, including *yu*, which turns place names into demonyms. Jensen (ibid.) suggests that *yu* may be a combination of the pronoun *i* 'he/she' and the adposition *u* 'of, from, at': *yu Waab* 'the Yapese', lit. 's/he from Yap'.

<sup>28</sup>I'm grateful to Jessica Coon for help with the literature on Mayan.

<sup>29</sup>In varieties of Ch'ol (Ch'olan, Western Mayan), the *aj* is required for person names irrespective of class/gender (Vázquez Álvarez, 2011:123), and notably occurs without a preceding *l-*. However, observing with Coon (2010:361) that unlike *aj* with common nouns (which does not license a definite reading), *aj* with proper names is subject to syntactic restrictions typical of definite determiners, this latter use of *aj* may be thought to license an unpronounced variant of the DA *l-*.



275), the Q'eqchi' *l-* is formally contained not in 3rd, but in 1st and 2nd person pronouns (30, from Eachus and Carlson, 1980:18).<sup>30</sup>

(30)	<i>lain</i> (1SG)	<i>lao</i> (1PL)	Q'eqchi'
	<i>laat</i> (2SG)	<i>laex</i> (2PL)	
	<i>a'an</i> (3SG)	<i>eb a'an</i> (3PL)	

That the shared *l-* of Q'eqchi' DA, PA, and non-3rd person pronouns is not simply a superficial idiosyncrasy, is suggested, for instance, by the fact that Halkomelem (Salish) has an oblique case determiner which is restricted to proper names and 1st and 2nd person pronouns (Wiltschko, 2009:50ff.).<sup>31</sup>

## 4.7 Summary

To briefly summarize Section 4, noun classification devices (noun class markers and types of classifiers) sometimes license the inference of a DA (or less commonly an IA) that is not phonetically present. Thinking of articles as structurally composed of C- and I-material, noun classifiers may be close to the I-material of DA whereas numeral classifiers may be close to that of IA. They (in particular NumCL) may co-occur with overt C-material, or they (especially NCL) may license the structural presence of C-material despite its phonetic absence. The structural distinction of C- and I-domain also seems useful in discussing patterns of the DA's morphological sensitivity to the proper name status of the noun and its morphological relation to pronominal person systems.

## 5 Structural affiliation: DA vs. IA

Articles are traditionally seen as direct constituents of the noun phrase, in the Chomskyan tradition typically in D, the head of the Determiner Phrase (Abney, 1987). This idea may have to be qualified in interesting ways at least for the DA. In fact, there are reasons to believe that DAs also occur in the adjectival domain and even in the clausal domain. Interestingly, this may not be the case for the IA, leaving it as uniquely nominal, and hence categorially distinguishing the two. On the other hand, clause-like tense-aspect-mood (TAM) material can occur inside the noun phrase as part of a DA's article conglomerate (but perhaps less readily as that of an IA's).

In this section, we will address nominal articles' proximity to the noun (5.1), morphological properties of adjectival articles (5.2), articles' place in the morphology of complex determiners (5.3), and nominal-verbal category shuffling phenomena as relevant to articles (5.4).

<sup>30</sup>This contrasts with the *l-* in the Yucatec (Yucatecan, Mayan) DA *le*, which is present in 3rd person forms only, preceding the formative *t-*, which is shared by all persons (cf. Janssen, 2004:984). Note that this *t-* may be related to *-te'*, the "most generic and frequent [numeral classifier of Classic Mayan] occurring in varied contexts in reference to people, time periods, and objects" (Law and Stuart, 2017:166).

<sup>31</sup>Cf. also Ritter's (1995) proposal based on Hebrew, that 1st and 2nd, but not 3rd person pronouns are determiners (i.e. of category D). There are languages in which the DA appears in all three persons of the pronominal system, e.g., Halkomelem (Salish), where "all of the independent pronouns are preceded by a syntactically active determiner *te/tu*" (Wiltschko, 2014:217). This is not unlike the Yucatecan *t-* from note 30 above, and the Southern Nambiquara language Ki<sup>3</sup>tāu<sup>3</sup>lhu<sup>2</sup> (Amazonian), a strongly suffixing language with a suffixal classifier system, and, farther from the nominal stem, (definite, indefinite, and conditional) article suffixes (Lowe, 1999:280ff.). In that language, the DEF.CURRENT suffix *-ai<sup>2</sup>na<sup>2</sup>* is also present in the free form pronouns, across all person-number-gender combinations (cf. *ibid.* p.283).

### 5.1 Nominal articles and proximity to the noun

Definiteness can be marked as a direct dependent of the noun phrase, i.e. by a *nominal article*, with variations regarding its linear position and the phonological and morphological proximity to the noun. German *der*, for instance, is a good candidate for a free article. It is in initial position in every sense. The Wakashan language Kwakw'ala has DAs which are also noun phrase initial, or rather pre-initial, in that they phonologically encliticize onto the preceding word, thus across a phrase boundary (cf. Klavans, 1985:107, citing Anderson, 1981). Hence the Kwakw'ala DA is initial in its syntactic domain, but final in its phonological domain. The effect is that a noun's determiner forms a phonological word with a preceding constituent.

- (31) k<sup>w</sup>iɣzʔid-i-da    bag<sup>w</sup>anəma-ɣ-a q'asa-s-is    t'alwagayu    Kwakw'ala  
clubbed-SBJ-DEF man-OBJ-DEF otter-INST-his club  
'The man clubbed the otter with his club.'

Some languages have a post-nominal enclitic DA, including Basque *-a* (Trask, 2003:119), and the Siouan language Hoocak (noted in Helmbrecht, 2003:19, here taken from Helmbrecht, 2016:431).

- (32) John=ga    hiráati=ra    Hoocak  
John=PROP car=DEF  
'John's car'

In others, the DA is a second position enclitic, e.g., in the Balkan languages Romanian (Romance, Dimitrova-Vulchanova and Giusti, 1998:339), and Albanian (Lyons, 1999:75ff.). The two differ in that some of the Romanian DA forms contain segmentable C-material, e.g., *-ul* 'DEF.M' containing the Romance *l*, whereas the Albanian DA consists of I-material, subsuming class, number, and case in a portmanteau fashion (ibid. p.71).

Lyons (1999:68ff.) also discusses Icelandic (Germanic), where the definite marker forms a phonological word with its noun. But structurally it may be more distant from it than it seems. Consider the partial paradigm in (33). Here definiteness is marked by an inflected piece that follows the noun.

- |      |        |             |         |               |        |
|------|--------|-------------|---------|---------------|--------|
|      |        | M           |         | F             |        |
| (33) | NOM.SG | hest-ur-inn | 'horse' | borg-in       | 'town' |
|      | GEN.SG | hest-s-ins  | 'horse' | borg-ar-innar | 'town' |
- Icelandic

Note that the noun and the suffixal DA each inflect for gender, number, and case (cf. Julien, 2005:5), i.e. both the noun and the suffixal article can be decomposed into stem and inflectional endings (Pfaff, 2015:42ff.). Extrapolating from the tradition of Greenberg's U28 and U39,<sup>32</sup> the post-nominal definite marker and the noun form separate morphological domains. This may suggest the possibility of a DA that is not a head in the noun phrase, an idea further evidenced in the following sections.

### 5.2 Adjectival articles

<sup>32</sup>U28: "If both the derivation and inflection follow the root, or they both precede the root, the derivation is always between the root and the inflection." – U39: "Where morphemes of both number and case are present and both follow or both precede the noun base, the expression of number almost always comes between the noun base and the expression of case." (Greenberg, 1966).

Some languages have *adjectival articles* (as opposed to *nominal articles*), henceforth AA (cf. also Chapter 28 of this volume). As far as I am aware, these are exclusively DA.<sup>33</sup> A well-known example is Greek (Indo-European), which has both an immediately pre-nominal DA and a pre-adjectival AA (Androutsopoulou, 1996, Alexiadou and Wilder, 1998).

- |      |    |                |        |         |        |    |              |        |        |        |       |
|------|----|----------------|--------|---------|--------|----|--------------|--------|--------|--------|-------|
| (34) | a. | to             | megalo | to      | vivlio | b. | ena          | megalo | (*ena) | vivlio | Greek |
|      |    | AA big         |        | DA book |        |    | IA big       |        | (IA)   | book   |       |
|      |    | 'the big book' |        |         |        |    | 'a big book' |        |        |        |       |

A slightly different case, also from Indo-European, is exemplified by Mainland Scandinavian Germanic (cf. Delsing, 1993) and Colloquial Slovenian (cf. Marušič and Žaucer, 2006). These two languages have no immediately prenominal DA but only an AA.<sup>34</sup>

- |      |    |                     |             |                 |
|------|----|---------------------|-------------|-----------------|
| (35) | a. | (det stora)         | hus-et      | Swedish         |
|      |    | (AA big)            | house-CLASS |                 |
|      |    | 'the (large) house' |             |                 |
|      | b. | (ta nov)            | pes         | Coll. Slovenian |
|      |    | (AA new)            | dog         |                 |
|      |    | 'the (new) dog'     |             |                 |

A further type may be a language which, like Greek, has both an adnominal DA and an AA, but, unlike Greek, only one of them is ever overt within a single noun phrase. This may correctly characterize Swiss German (and by analogy German, English, etc.). In Swiss German, the pre-adjectival article sometimes differs from the adnominal article with regard to its inflection (cf. for instance Weber, 1964:107). Concretely, in feminine (and also in plural) structural case marked environments, the pre-adjectival article is *di* 'the.F' as in (36b), while the adnominal article lacks the agreement suffix *-i*, as in (36a). Remarkably, this *-i* suffix is identical to the adjectival agreement suffix of the strong declension, as in (36c), cf. Section 2.2.

- |      |    |            |      |    |      |                |          |    |   |              |            |
|------|----|------------|------|----|------|----------------|----------|----|---|--------------|------------|
| (36) | a. | d          | rosä | b. | [d-i | rot]           | rosä     | c. | ä | [rot-i]      | rosä       |
|      |    | DA(F)      | rose |    |      | AA-F           | red rose |    |   | IA           | red-F rose |
|      |    | 'the rose' |      |    |      | 'the red rose' |          |    |   | 'a red rose' |            |

This is morphologically interesting since it suggests that the inflectional suffix has a certain positional independence rather than being a lexical part of a category (DA or adjective). In fact, the suffix exhibits a

<sup>33</sup>Weber (1964:107) notes for Zürich German that *e(n)* replaces the neuter IA *es* before adjectives. This may, at first blush, look like a case of an adjectival IA.

(i)	es	chind	(ii)	e	liebs	chind	(iii)	en	aartigs	chind
	a	child		a	good	child		a	polite	child

But note that the argument from declension for an adjectival DA (cf. the discussion of examples 36) comes from the DA's influencing the adjective's inflection. In the case of the IA in (i-iii) it is the other way around, if anything. The inflected adjective in (ii) and (iii) seems to obliterate (expression of) the I-domain of the IA.

<sup>34</sup>This may not be restricted to Indo-European. Giusti (2008) draws parallels between Romanian and Bantu languages, where "[t]he augment prefix cannot occur on bare (unmodified) nouns" (Jenks et al., 2017:25).

second position-type behaviour within a certain domain, which includes the DA (more precisely the AA) but not the IA, as indicated by the square brackets, suggesting an analysis of Swiss German (and by analogy of German) adjectival declension in terms of an AA, as informed by Greek, Slovenian, and North-Germanic (Leu, 2015a,b).

The observations on AA and adjectival agreement may also be relevant to languages that have definiteness agreement on modifiers. An example of such a language is Swahili (Lyons, 1999:71, 87). Another example is Lithuanian (Baltic, Indo-European), a language said to have no articles (WALS), but which distinguishes between a nominal/indefinite and a pronominal/definite form in attributive and appositive adjectives (of the first and second declensions). The definite form in (37, adapted from Šereikaitė, forthcoming) is derived by “suffigating [...] the pronoun (*j*)is [(i.e. the singular feminine nominative form *ji* in 37b)] onto the short form (whereby both components [...] are declined) making it ‘definite’ in meaning” (Mathiassen, 1996:65).

- |      |    |                                 |               |            |
|------|----|---------------------------------|---------------|------------|
| (37) | a. | graž-i                          | mergin-a      | Lithuanian |
|      |    | beautiful-SG.F.NOM              | girl-SG.F.NOM |            |
|      |    | ‘a/the beautiful girl’          |               |            |
|      | b. | graž-io-ji                      | mergin-a      |            |
|      |    | beautiful-SG.F.NOM-DEF.SG.F.NOM | girl-SG.F.NOM |            |
|      |    | ‘the beautiful girl’            |               |            |

The fact that both the adjective and the post-adjectival pronominal are declined separately makes *-ji* very much look like a post-adjectival AA. Hence, while Lithuanian has no adnominal DA, it may, in analogy to our considerations regarding Icelandic in Section 5.1, well have an AA, which forms its own morphological domain.

Finally, let us take a comparative look at Amharic (Semitic) and Danish (Germanic). In Amharic, a suffixal adnominal DA and a suffixal AA can be distinguished. Recall that definiteness is marked with the suffix *-u* (38a, Leslau, 1995:154). Suffixal definite marking on the noun is not compatible with a demonstrative<sup>35</sup> (38b, Kramer, 2010:201), nor with other modifiers, as in (38c), where only the adjective is suffixed by *-u*.<sup>36</sup> This adjectival suffix, however, is compatible with the demonstrative (38d).

- |      |    |              |    |                  |         |
|------|----|--------------|----|------------------|---------|
| (38) | a. | bet-u        | c. | tələq-u bet      | Amharic |
|      |    | ‘the house’  |    | ‘the big house’  |         |
|      | b. | ya bet(*-u)  | d. | ya tələq(-u) bet |         |
|      |    | ‘that house’ |    | ‘that big house’ |         |

This is reminiscent of North-Germanic (Julien, 2005:112ff., Leu, 2015a), in particular Danish, where the presence of an adjective abrogates suffixal definite (via class) marking on the noun (39c), replacing it by a pre-adjectival free AA. Unlike the nominal suffix (cf. 39a,b), this AA is optionally compatible with a preceding demonstrative in Danish (39d), analogous to Amharic (38d).

<sup>35</sup>Kramer (ibid. note 6) notes that *ya-w* is possible, meaning ‘that one’, cf. *tələq-u* ‘the big one’ (spelling of *tələq-u* as in Leslau).

<sup>36</sup>In a sequence like *tələq-u bet-u* ‘his big house’, the noun affix gives rise to a 3SG possessive interpretation (Leslau, 1995:157). In the case of complex adjectival modifiers and relative clauses, the article suffixes to the (prenominal) modifying constituent (ibid. p.87; also Kramer, 2010:199). With multiple (prenominal) adjectives, definiteness marking is obligatory on the leftmost one and optional on subsequent adjectives (Kramer, 2010:200).

- (39) a. hus-et  
house-CLASS  
'the house'
- b. dette (\*det) hus(\*-et)  
this (DA) house(-CLASS)  
'this house'
- c. \*(det) høje hus(\*-et) Danish  
(AA) tall house(-CLASS)  
'the tall house'
- d. dette (det) høje (\*det) flotte hus  
this (AA) tall (AA) stylish house  
'this tall stylish house'

The comparison with Danish (39) suggests that the co-occurrence pattern in (38) is not related to the suffixal nature of the DA in Amharic. Instead the morphosyntactic status of the noun suffix *-u* in (38a) is distinct from that of the homophonous adjective suffix, in Amharic, identifying the latter as an AA, i.e. a DA that is a constituent of the adjectival phrase.

### 5.3 Articles and complex determiners

There is some terminological confusion with regard to the relation of the words *determiner* and *article*. On a fairly common usage the former is a hypernym subsuming the latter (cf. Lyons, 1999, Matthews, 2014). Some authors use the latter, *article*, as the relevant hypernym (cf. Schwartz, 2000). For many an author, *the determiner* refers to the definite article, yet other authors distinguish *articles* and *determiners* disjunctively (cf. Szabolcsi, 1987, 1994).

The question of whether the term *determiner* subsumes the articles must be distinguished from the idea that (complex) determiners structurally contain an article (cf. also Chapters 31 and 32 of this volume). As mentioned above, such containment is quite apparent in some cases. It can pertain to the article's I-domain or C-domain, or to the article as a whole. A likely example of the latter is the Solomons East Papuan language Lavukaleve (cf. Terrill, 1999:55ff.). The Lavukaleve demonstrative determiner forms in (40) systematically morphologically contain the DA in all the forms that are not explicitly feminine. (The partial paradigm is taken from Terrill, 1999:162.)

	SG			DUAL			PL
	M	F	N	M	F	N	
(40) prox. Dem	hona	ho	hoga	honala	hol	hogala	hova
DA	na	la	ga	nala	la	gala	va

Lavukaleve

Examples of C-domain-only containment of DA (i.e. possibly AA) include, e.g., English demonstratives *th-is*, *th-at* (cf. Section 3.1)

Such article containment relations are not limited to demonstratives. A different example comes from the distributive universal quantifier in Basque *mutil bakoitz-a* 'boy each-DEF.SG' (Etxeberria, 2012:89). Similarly the German distributive universal quantifier *jeder* 'every' contains the DA's *-d-*, cf. Kallulli and Rothmayr (2008), but otherwise inflects like an adjective, cf. *d-as* 'the-N' vs. *je-d-es* '∀-the-N' (Leu, 2010).

Examples regarding the IA are evident in German (Leu, 2017), where the IA *ein* is morphologically contained in, e.g., possessive determiners *m-ein* 'my', *d-ein* 'your', *s-ein* 'her/his/its' (cf. Wiltchko, 2014:214), and in the negative determiner *k-ein* 'no' (cf. Section 2.2). The pronominal variant of the latter (41a) seems to have an isomorphic structure to its Tariana (Arawak, Amazonian) counterpart, cf. (41b) from Aikhenvald (2003:216).

- |      |   |        |   |         |
|------|---|--------|---|---------|
| (41) | a. k- ein -er<br>NEG one NOM.SG.M<br>'no one' | German | b. ne- pa:- ita<br>NEG one NumCL:ANIM<br>'no one' | Tariana |
|------|---|--------|---|---------|

There may be complex determiners which contain both a variant of DA and a variant of IA. By “variant of” I mean to include cases of AA as in German *einjeder* ‘each and every’ (42, cf. Roehrs, 2012, Leu 2015a:155ff.), and Dem-qua-DA and ‘one’(+CL)-qua-IA (43, from Zhang, 2019).

- |      |  |                 |   |          |
|------|--|-----------------|---|----------|
| (42) | ein je d er<br>one $\forall$ AA NOM.SG.M boy<br>'each and every boy' | Junge<br>German | (43) zhe yi ben shu<br>DEM one CL book<br>'this book' | Mandarin |
|------|--|-----------------|---|----------|

In light of the previous subsection, the DA in complex determiners may be an AA (Leu, 2015a), outing Dem-qua-DA as instances of AA-qua-DA. Thus AAs may be a major diachronic source of DAs (cf. Section 3.1). If it is correct to suppose that universally there are no IA adjectival articles, the IA in complex determiners, on the other hand, has a different status (see also Bennis et al., 1998). This provides a rationale for the conjecture final statement of Section 3.1, that there may be no cases of principled morphological similarity between IA and a demonstrative. For more discussion on the general topic of the morphology of complex determiners see Chapters 31, 32, 35, and 36 of this volume.

## 5.4 Nominal and clausal categories – and articles

Morphological material that is identified as DA can sometimes occur outside and independently of the noun phrase, in the clause. This is witnessed in the literature on Kwa (Niger-Congo) languages (Lefebvre, 1992, Saah, 2010), the related Haitian Creole (Lefebvre, 1998), but also on the Siouan language Omaha for which uses of the articles as relative clause markers, auxiliaries, copulas, evidential markers, and clause linkers (i.e. subordinators) have been described (Eschenberg, 2005:Ch.5).<sup>37</sup> A link to German is interesting, where it is possible to argue for a clausal DA qua complementizer. Supposing a syntactic decomposition of the finite declarative complementizer *dass* ‘that’ into *d-* and *-ass*,<sup>38</sup> the *d-* is identical to (the C-material of the DA and) the adjectival article, both in its form *d-(X)* and in its interaction with the root layer (or lexical head) of its domain: The absence of *d-(X)* correlates with movement of that root layer to the article’s position (Leu, 2015b). This may capture the essence of both the V-final/V2 alternation as discussed for West-Germanic by den Besten (1983); and the weak/strong adjectival declension alternation, mentioned in Section 5.2, structurally partly unifying the two. Tzutujil (Mayan) is similar to German in having a “definite article *ja(r)* [which] is used as a complementizer introducing embedded clauses with fully inflected finite verbs”

<sup>37</sup>Observing systematic phonological correspondences between article forms and auxiliaries in several Siouan languages, Rankin (1977, 2004) “posits a pathway from verb to auxiliary to noun classifier to definite article and back to auxiliary verb” (Eschenberg, 2005:182). Considering the affinity between DA and pronouns, this may be relatable to observations by Ritter (1995) about Hebrew pronouns doubling as copula verbs (cf. Witschko 2014:79).

<sup>38</sup>Given the suggestions in Section 2.1, the proposal in Baunaz and Lander (2018b) to decompose complementizer *dass* into *d-a-ss* ‘that’ may be relevant.

(Dayley, 1981:327). Regarding the categorial contrast between DA and IA, there are, for all I know, no indefinite clausal articles in the world's languages.<sup>39</sup>

Having mentioned clause-related DA material outside the noun phrase, the rest of this section briefly discusses noun phrase-external DA-material relating to the noun phrase; prototypically clausal material occurring inside the noun phrase independently of the clause; and clausal material occurring inside the noun phrase but relating to the clause.

Noun phrase-external definiteness marking may be found in the guise of verbal agreement, as, e.g., in Hungarian, where an (albeit “semantically inhomogeneous”) range of noun phrases trigger definite object agreement on the verb (Szabolcsi, 1994:222ff.). This may be a case of agreement in formal C-domain features (Coppock and Wechsler, 2012). To the extent that there is legitimacy in stretching the notion of DA to include certain pronouns (cf. Postal, 1966), there are also languages where definite marking is accomplished by an exclusively noun phrase external DA. An example is the Australian language Ngiyambaa (a Southeastern Pama-Nyungan language with neither DA nor IA, cf. WALS), in which “third person pronominal enclitics to the verb are optional. If a third person predicate argument is shown just by an NP [44a], it is taken to be indefinite; if it is shown by an NP and by a pronominal clitic [44b] it is taken to be definite” (Dixon, 2004:66, example from Donaldson 1980:128, here taken from Dixon 2004:377).

- (44) a. mirri-gu burra:y gadhiyi Ngiyambaa  
       dog-ERG child.ABS bite.PAST  
       ‘the/a dog bit a child/some children’  
       b. mirri-gu=na burra:y gadhiyi  
       dog-ERG=3SG.O child.ABS bite.PAST  
       ‘the/a dog bit the child’

The pronoun in (44b) is a clause level Wackernagel clitic, i.e. encliticizes to the first constituent of the clause (cf. Nevis, 2000:396). Hence it does not form a constituent with its associated noun phrase, yet they are referentially linked.

Nominal articles (overt or not) may also be possible licensors for noun phrase internal expression of prototypically clausal material. By prototypically clausal material I mean TAM (tense-aspect-mood) markers. Nordlinger and Sadler (2004) discuss a number of languages in which TAM morphology occurs inside the noun phrase. They basically distinguish independent nominal TAM and propositional nominal TAM. The former is found, e.g., in the northwest Amazonian Arawak language Tariana, exemplified in (45), where the nominal stem *unyane* ‘flood’ is suffixed by the TAM marker *-pena* ‘FUT’ whose specifications contrast with the propositional level TAM marking on the verb (Aikhenvald 2003:184, here taken from Nordlinger and Sadler, 2004:780).

- (45) Kayu-maka hĩ waripere unyane-pena di-kakwa=pidana. Tariana  
       so-AFF DEM:ANIM Walipere flood-FUT 3.SG.NF-plan=REM.P.REP  
       ‘Thus Walipere was planning the future flood.’

Note that Aikhenvald’s translation of *unyane-pena* ‘flood-FUT’ is definite. The Amazonian language Nambiquara, spoken in the Brazilian State of Mato Grosso do Norte, can mark definite nouns, but not indefinite ones, for tense (Lowe 1999:281ff., cf. also Nordlinger and Sadler, 2004:784ff., on Kroeker’s,

<sup>39</sup>If Kayne (2014) is right, the relevant link is between DA and relative pronouns rather than complementizers.

2001, description of “Nambikuara”, where Lowe’s observational tense and evidentiality is described solely in terms of tense).

Another (and non-South American) example of independent nominal tense comes from the Cushitic language Somali (46). Here independent nominal tense marking morphologically interacts with definiteness (cf. Lecarme, 1999:335ff., here taken from Nordlinger and Sadler, 2004:785).

(46) Somali definite articles:

	NON-PAST	PAST
NOM	-ku/-tu	-kii/-tii
NON-NOM	-ka/-ta	-kii/-tii

The Somali suffixal article seems to be a case of I-qua-C: the consonant registers class/gender; the vowel registers  $\pm$ nominative and  $\pm$ past. Its independence from the proposition level tense specification is illustrated in the following minimal pair (from Lecarme, 1999:338, here taken from Nordlinger and Sadler, 2004:786).

- (47) a. bandhíg-gii máad daawatay? Somali  
 exhibition-DET.M.PST Q.2.SG see.PST  
 ‘Have you seen the exhibition (closed at utterance time)?’  
 b. bandhíg-ga máad daawatay?  
 exhibition-DET.M Q.2.SG see.PST  
 ‘Have you seen the exhibition (still running at utterance time)?’

Finally, there are languages in which propositional tense can be morphologically expressed in a dependent noun phrase, as exemplified in (48) from the Peruvian Awarak language Chamicuro (Parker, 1999:554; here take from Nordlinger and Sadler, 2004:796).

- (48) Y-ahkašamustá-wa ka maʔpóhta ka maʔnáli. Chamicuro  
 3-scare-1.OBJ THE(PAST) two THE(PAST) jaguar  
 ‘The two jaguars scared me.’

From our discussion in the previous sections and from the examples seen in this one, one might be tempted to think that nominal tense may be restricted to occurring in definite contexts. Indeed Nordlinger and Sadler (2004:787, note 27) mention the possibility of a connection between definiteness and tense in the context of nominal tense. But examples like (49) from Tariana (cf. Aikhenvald 2003:185ff.), where an independent nominal past is associated with a (semantically) indefinite noun phrase, hold us to caution.

- (49) kayu-maka diha nawiki-nha ñamu na-nite  
 so-AFF he person-PAUS evil.spirit 3PL+say-TOP.ADV+NCL:ANIM  
 nawiki-miki-r-mha  
 person-NOM.PAST-NF-PRES.NONVIS  
 ‘So this man called evil spirit (ñamu) he is the one who used to be a person (i.e. an “ex-person”).’

Instances of non-tense related co-occurrence interaction contrasting DA and IA are discussed in the following and last section.



## 6 Co-occurrence interactions: DA vs. IA

Sometimes the expression of a grammatical category seems to be conditional on the presence of a certain other grammatical category. In this final section, we will briefly mention three kinds of interaction patterns between case or case-assigning categories and the DA/IA-contrast (cf. also Chapter 21 of this volume). In 6.1 we will see instances of differential object marking (DOM), where DA plays the role of a licenser of case morphology. In 6.2 we will see instances of PD-contraction, where DA morphology falls prey to the presence of a preposition. And in 6.3, finally, we will see an essentially converse phenomenon, instances of PD-revelation, where the IA's C-material reaches surface expression in the presence of a preposition.

### 6.1 Differential object marking: DA vs. IA

In one type of DA vs. IA asymmetric co-occurrence pattern, overt case morphology is conditional on the presence of an overt DA. Examples include Hebrew (50), where bare/indefinite direct objects occur without the object marker *et*, while definite marked direct objects occur with overt *et* (which amalgamates with the prefixal DA *ha-* to *ta*, cf. Danon, 2006:979).

- |      |    |  |    |                                    |        |
|------|----|--|----|------------------------------------|--------|
| (50) | a. | Dan kara (* <i>et</i> ) (kama) itonim. | b. | Dan kara *( <i>et</i> ) ha-itonim. | Hebrew |
|      |    | Dan read OBJ (some) newspaper.         |    | Dan read OBJ DET-newspaper         |        |
|      |    | 'Dan read (some) newspapers.'          |    | 'Dan read the newspaper.'          |        |

A similar pattern, albeit suffixal and surface-agglutinating, obtains in Amharic (also Semitic), where definite objects (including proper names, personal, and demonstrative pronouns) but not indefinite objects take the accusative suffix *-(i)n* (Amberber, 2008:746). Another example is (51) from the Omotic language Aari (Hayward, 1990a), which has an affixal DA and no IA. In Aari the expression of case (other than genitive, *ibid.* p.446), as well as of number and class/gender, is dependent on the expression of "species" (i.e. definiteness), cf. *ibid.* p.442ff., as exemplified in (51).

- |      |    |       |    |                  |    |               |      |
|------|----|-------|----|------------------|----|---------------|------|
| (51) | a. | fatír | b. | fatirín          | c. | fatirinám     | Aari |
|      |    | maize |    | maize.DEF.NONACC |    | maize.DEF.ACC |      |

This may be contrasted with, e.g., Sinhalese (Indo-Aryan, Indo-European). In Sinhalese, which has suffixal IAs but no DA, case morphology is also suffixal and farther from the nominal root than the article, as in Aari, but, contrary to Aari, case exponence is indiscriminate of the present or absence of the article: *kaḍē-ṭa* 'to the shop' / *kaḍē-ka-ṭa* 'to a shop' (Masica, 1991:250).<sup>40</sup> I am not aware of a language with the converse pattern of (50), i.e. where overt case morphology is conditional on the presence of an IA.

### 6.2 PD-contraction and disappearance of DA

The DA quite commonly, according to Lyons (1999:66), interacts morphologically with an embedding preposition in a formally destructive way (cf. Van Riemsdijk, 1998, Carlier, 2007), henceforth PD-contraction. In some cases the result is what Hockett (1947:333) called a *portmanteau* form, such as French *à+le = au* (pronounced [o]) in (52b).<sup>41</sup> In other cases the result remains segmentable, but

<sup>40</sup>See Malchukov and Spencer (2008) for more discussions of forms of interaction between case and definiteness/specificity marking in various languages.

<sup>41</sup>It is thinkable to envisage a less morphological and more phonological account of French *au*, cf. Newell and Noonan, 2018, note 2.

some morphemes and/or phonological segments fall prey to the amalgamation, as in German (53c), where *von+dem* = *vom*.<sup>42</sup>

- |      |                      |                        |        |
|------|----------------------|------------------------|--------|
| (52) | a. à la maison       | b. au bureau           | French |
|      | at the.F house       | at.the.M office        |        |
| (53) | a. von der Gasse     | b. vo-m Bahnhof        | German |
|      | from the.F.DAT alley | from-the.M.DAT station |        |

In some cases, a suppletive form of the preposition amalgamates with the article. For instance in Portuguese *em* ‘in/on/at’ + *o(s)/a(s)* ‘DEF.M/F.(PL)’ = *no(s)*, *na(s)* ‘in/on/at the’ (Celegatti Althoff, 2007:28).

There are restrictions on PD-contractability, which can be phonological or semantic/structural. In French, and analogously in Catalan, the contraction is prevented if the (singular) article is followed by a vowel-initial word, in which case the article is reduced to its C-material. In German, where weak and strong articles are distinguished (cf. Studler, 2008, Schwarz, 2009, cf. Schwarz, 2013, for an extension beyond Germanic; see also Chapter 27 of this volume), PD-contraction is observed with weak articles only. In fact, contractability is one of the overt hallmarks of the contrast.<sup>43</sup>

PD-contraction sometimes exhibits sensitivity to class (52-53), sharing a higher propensity for PD contraction in the non-feminine, e.g. in French, Catalan, and German. Catalan, for instance, has the regular DAs singular *el* ‘DEF.M’, *la* ‘DEF.F’, pre-vocalic *l’*, and the plural forms *els*, *les*. But after the prepositions *a*, *de*, *per*, and *ca* the explicitly masculine forms *el*, *els* contract with the preposition to singular *al*, *del*, *pel* and *cal*, and plural *als*, *dels*, *pels* and *cals*, respectively (Wheeler et al., 1999:43ff). Reduced *l’* and feminine forms do not contract. The source of this may be structural, if it is correct to think, for instance, that feminine is structurally more complex than masculine (cf. Ferrari, 2005). More superficially, the source may also be phonological, considering that a vowel following *l’* prevents contraction, and that the feminine DAs *la*, *les* have a vowel following *l’*.

In some instances, after a preposition the DA is entirely absorbed, or omitted. An example is (54) from Tzutujil (Mayan), a language in which “[a]fter prepositions and relational nouns the definite article is often omitted even though the object [...] may be understood to be definite” (Dayley, 1981:352, example from p.320, my morpheme glosses, T.L.).

- |      |                            |          |
|------|----------------------------|----------|
| (54) | X-in-koj pa kaxoon         | Tzutujil |
|      | CPL-1 SG-put in crate      |          |
|      | ‘I put it in (the) crate.’ |          |

Such phonetic eclipse of the DA is also observed in Swiss German after certain prepositions, but only in masculine contexts (55a), cf. the minimally contrasting structural case marked (55b), indefinite (55c), and feminine (55d).<sup>44</sup>

<sup>42</sup>A morphologically more accurate glossing of German (53b) would probably be *from*-M.DAT.

<sup>43</sup>This may be partly explained in terms of a structural affinity of the “strong article” with demonstratives (Leu, 2008).

<sup>44</sup>The class of prepositions with this effect seems to be phonologically characterizable as mono-segmental vocalic: *i* ‘into’ and *a* ‘at/onto’.

- This may, again, find an analogue in an affixal DA, namely in Bulgarian (Slavic, Indo-European). The Bulgarian DA is a phrasal affix, more precisely, a second position clitic. It has a C-domain consonant *t*- (plausibly related to the *t*- found in the Slavic demonstrative *to*-, cf. Baunaz and Lander, 2018), and an I-domain vowel, reflecting class and number. Conspicuously, the *t*- is missing in the masculine singular in oblique (i.e. non-nominative) case contexts (Lyons, 1999:73).

To the extent that it is empirically correct to observe that total eclipse, as in (54) and (55a), and also less total cases, as in (52), (53) and (56), are exclusive to the DA (as opposed to the IA), this is remarkable. In fact, the IA seems to exhibit the converse behaviour in Swiss German, showing a sort of occurrence dependency in that it actually (re-)appears under prepositions. This is discussed in the next subsection.

Above (around examples (18) from Swiss German and (20) from Swedish) I suggested that in some cases what is traditionally described as IA may be the exponent of class. To the extent that in such cases an IA is structurally present, it thus must be assumed not to have overt exponence. Consider the examples from Swiss German where what is usually called the “indefinite article” in structural case environments is essentially a class marker.

- The morpheme which (at least diachronically) corresponds to German *ein* ‘a/one’ is non-overt in these environments. However, it reappears in oblique case environments, in addition to case/class morphology. Comparing the nominative/accusative forms (57) with the dative forms (58), we see that in the latter the article conglomerate contains three separate morphemes: a class-sensitive dative case morpheme (feminine *-ər* and non-feminine *-əm*), an invariant final agreement suffix *-ä*, and an *ən*, which is the “stem” of the IA, its C-component.

- (58) a. uf əm [-ən- ]-ä buäch<sub>neu</sub> ‘on a book’ Swiss G.  
 b. uf [-ən- -ər ]-ä bluämä<sub>fem</sub> ‘on a flower’  
 on DAT.M/N -IA -DAT.F -AGR N

Remarkable is also the interaction between case and agreement. The class-sensitive dative marker is segmentally independent and separate both from the stem *ən* and from the invariant suffixal piece of inflection *-ä*. This suffixal agreement inflection in the dative appears class-neutralized, reminiscent of the vocalic inflection of the DA in German, where the three-way gender contrast of nominative/accusative *der/den, die, das* is neutralized to *deC* in dative/genitive (cf. the table in (3), and Leu 2015a:Ch.8).

The emergence of the IA morpheme (*ən*) is not dependent on dative case, however. It also occurs in accusative environments, provided that they are prepositional.<sup>45</sup>

- (59) a. für n əs chind                      b. uf n əs buäch                      c. uf n ä bluämä  
 for a N child                      onto a N book                      onto a F flower  
 ‘for a child’                      ‘onto a book’                      ‘onto a flower’

This suggests that the actual IA (in the narrow sense) is unpronounced in (57), and that what is traditionally analyzed as *article* is really mostly I-material signalling the structural presence of an unpronounced article.<sup>46</sup>

## 7 Conclusion

The traditional two articles, definite article (DA) and indefinite article (IA), are separate categories, as is suggested by their distinct cross-linguistic distributions, diachronic, categorial, and structural affiliations, and morphosyntactic properties. In particular, definite articles seem to be more prevalent in grammatical structures than indefinite articles, more “multifunctional”, perhaps, occurring not only in the noun phrase but also in (association with) other categories, other determiners, adjectival modifiers, and the clause. Both kinds of articles can be morphologically complex, in which case it is often possible to distinguish between noun classifying material (what I called I-material), sometimes amalgamated with case; and discourse-referential, i.e. C-material.

Even though both are structurally complex, a recurrent contrast between DA and IA is that the DA tends to exhibit a greater structural complexity than the IA. And even though in both it occurs that part of the structure remains phonetically unexposed, the conditions on phonetic presence and absence of parts of the structure are different for the DA than they are for the IA. These conditions may have to do with the embedding context, in particular prepositions, or with a language’s use of the types of noun categorization devices, whereby noun classifiers commonly license a non-overt DA, and numeral classifiers combine with an overt variant of ‘one’ to produce an IA. The latter can further be re-turned into a definite structure by means of adding a demonstrative.

<sup>45</sup>This may constitute an argument for the idea that dative, in Swiss German, is always prepositional.

<sup>46</sup>The exact morphological status of the vocalic element (the schwa in 57c and 59a,b) mentioned in note 15, which distinguishes I-qua-IA from I-qua-DA (cf. example 18) remains to be understood.

## References

- Abney, Steven. 1987. The English noun phrase in its sentential aspect. Doctoral Dissertation, MIT.
- Ahrens, Kathleen, and Chu-Ren Huang. 2016. Classifiers. In *A Reference Grammar of Chinese*, ed. Chu-Ren Huang and Dingxu Shi, chapter 7, 169–198. Cambridge: Cambridge University Press.
- Aikhenvald, Alexandra Y. 2000. *Classifiers: A typology of noun classification devices*. Oxford University Press.
- Aikhenvald, Alexandra Y. 2003. *A Grammar of Tariana from Northwest Amazonia*. Cambridge University Press.
- Aikhenvald, Alexandra Y. 2004. Gender and noun class. In *Morphologie: Ein internationales Handbuch zur Flexion und Wortbildung*, ed. Geert Booij, Christian Lehmann, Joachim Mugdan, and Stavros Skopeteas, number 2 in HSK 17, chapter 98, 1031–1045. Berlin: Walter de Gruyter.
- Aikhenvald, Alexandra Y. 2015. *The Art of Grammar: A Practical Guide*. Oxford University Press.
- Aissen, Judith, Nora C. England, and Roberto Zavala Maldonado, ed. 2017. *The Mayan Languages*. Routledge Language Family Series. London and New York: Routledge.
- Alexiadou, Artemis, and Chris Wilder. 1998. Adjectival Modification and Multiple Determiners. In *Possessors, Predicates and Movement in the DP*, ed. Artemis Alexiadou and Chris Wilder. Amsterdam and Philadelphia: John Benjamins.
- Anderson, Stephen R. 1981. Kwakwala syntax and the government/binding theory. Ms. Department of Linguistics, UCLA.
- Androutsopoulou, Antonia. 1996. Licensing of adjectival modification. In *Proceedings of the fourteenth West Coast Conference of Formal Linguistics*, ed. Jose Camacho, Lina Choueiri, and Maki Watanabe, 17–31.
- Baquiáx Barreno, Modesto, Rigoberto Juárez Mateo, Fernando Rodríguez Mejía, and María Magdalena Pérez. 2005. *Yaq'b'anil stxolilal ti' Q'anjob'al: Gramática descriptiva Q'anjob'al*. Guatemala: Academia de Lenguas Mayas de Guatemala, AMLG.
- Baunaz, Lena, and Eric Lander. 2018a. Cross-categorial syncretism and containment in balkan and slavic. *Balkan Syntax and (Universal) Principles of Grammar* 218–246.
- Baunaz, Lena, and Eric Lander. 2018b. Deconstructing categories syncretic with the nominal complementizer. *Glossa* 3:31. 1–27.
- Bennis, Hans, Norbert Corver, and Marcel den Dikken. 1998. Predication in nominal phrases. *Journal of Comparative Germanic Linguistics* 1:85–117.
- den Besten, Hans. 1983. On the interaction of root transformations and lexical deletive rules. In *On the Formal Syntax of the Westgermania*, ed. Werner Abraham, Vol. 3 of *Linguistik Aktuell/Linguistics today*, 4–12. Amsterdam and Philadelphia: John Benjamins.

- Bierwisch, Manfred. 1967. Syntactic features in morphology: General problems of so-called pronominal inflection in German. In *To Honour Roman Jakobson*, 239–270. The Hague: Mouton.
- Bisang, Walter. 1999. Classifiers in East and Southeast Asian languages. In *Numeral Types and Changes Worldwide*, ed. Jadranka Gvozdanovic, 113–185. Mouton de Gruyter.
- Borer, Hagit. 2005. *In Name Only*, Vol. I of *Structuring Sense*. Oxford University Press.
- Can Pixabaj, Telma Angelina. 2017. K'iche'. In *The Mayan Languages*, ed. Judith Aissen, Nora C. England, and Roberto Zavala Maldonado, Routledge Language Family Series, chapter 18, 461–499. London and New York: Routledge.
- Cardinaletti, Anna, and Michal Starke. 1999. The typology of structural deficiency. In *Clitics in the Languages of Europe*, ed. Henk van Riemsdijk, 145–233. Berlin: Mouton de Gruyter.
- Carlier, Anne. 2007. From preposition to article. The grammaticalization of French partitive. *Studies in Language* 31:1–49.
- Celegatti Althoff, Sonia. 2007. *Portuguese Grammar. A Complete, Concise and Practical Reference for Beginners to Advanced Students*. [www.sonia-portuguese.com](http://www.sonia-portuguese.com), 2<sup>nd</sup> edition.
- Cheng, Lisa L.-S., and Rint Sybesma. 1999. Bare and not-so-bare nouns and the structure of NP. *Linguistic Inquiry* 30:509–542.
- Cheng, Lisa L.-S., and Rint Sybesma. 2005. Classifiers in four varieties of Chinese. In *The Oxford Handbook of Comparative Syntax*, ed. Guglielmo Cinque and Richard S. Kayne, 259–292. New York and Oxford: Oxford University Press.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, Mass.: MIT Press.
- Coon, Jessica. 2010. VOS as predicate fronting in Chol. *Lingua* 120:354–378.
- Coon, Jessica. 2017. Ch'ol. In *The Mayan Languages*, ed. Judith Aissen, Nora C. England, and Roberto Zavala Maldonado, Routledge Language Family Series, chapter 23, 648–684. London and New York: Routledge.
- Coppock, Elizabeth, and Stephen Wechsler. 2012. The objective conjugation in Hungarian: Agreement without phi-features. *Natural Language and Linguistic Theory* 30:699–740.
- Craig, Colette G. 1986. Jacalteco noun classifiers. A study in grammaticalization. *Lingua* 70:241–284.
- Danon, Gabi. 2006. Caseless nominals and the projection of DP. *Natural Language and Linguistic Theory* 24:977–1008.
- Dayley, Jon Philip. 1981. Tzutujil Grammar. Doctoral Dissertation, University of California, Berkeley.
- Delsing, Lars-Olof. 1993. The Internal Structure of Noun Phrases in Scandinavian Languages. Doctoral Dissertation, Lund.

- Diessel, Holger. 1999. *Demonstratives: Form, Function, and Grammaticalization*. Amsterdam: John Benjamins.
- Dimitrova-Vulchanova, M., and G. Giusti. 1998. Fragments of Balkan nominal structure. In *Possessors, Predicates, and Movement in the Determiner Phrase*, ed. Artemis Alexiadou and Chris Wilder, *Linguistik Aktuell* 22, 333–361. Amsterdam: John Benjamins.
- Dixon, R. M. W. 1986. Noun classes and noun classification in typological perspective. In *Noun Classes and Categorization: Proceedings of a Symposium on Categorization and Noun Classification. Eugene, Oregon, October 1983*, ed. Colette Craig, 105–112. Amsterdam: John Benjamins.
- Dixon, R.M.W. 2004. *Australian Languages. Their Nature and Development*. Cambridge: Cambridge University Press.
- Dryer, Matthew. 2013a. Definite articles. In *The World Atlas of Language Structures Online*, ed. Matthew Dryer and Martin Haspelmath, chapter 37. Leipzig: Max Planck Institute for Evolutionary Anthropology.
- Dryer, Matthew. 2013b. Indefinite articles. In *The World Atlas of Language Structures Online*, ed. Matthew Dryer and Martin Haspelmath, chapter 38. Leipzig: Max Planck Institute for Evolutionary Anthropology.
- Dryer, Matthew S. 2007. Noun phrase structure. In *Language Typology and Syntactic Description: Complex Constructions*, ed. Timothy Shopen, Vol. 2, 151–205. Cambridge University Press, 2<sup>nd</sup> edition.
- Dryer, Matthew S., and Martin Haspelmath, ed. 2013. *WALS Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. URL <http://wals.info/>.
- Eachus, Francis, and Ruth Carlson. 1980. *Aprendamos Kekchi. Gramática pedagógica popular de kekchí*. Apartado 74. Guatemala: Instituto Lingüístico de Verano.
- Eschenberg, Ardis. 2005. The article system of Umo<sup>n</sup>ho<sup>n</sup> (Omaha). Doctoral Dissertation, SUNY Buffalo.
- Etcheberria, Urtzi. 2012. The way the definite determiner affects quantifiers in Basque (and beyond). In *Noun Phrases and Nominalization in Basque. Syntax and Semantics*, ed. Urtzi Etcheberria, Ricardo Etxepare, and Myriam Uribe-Etxebarria, *Linguistik Aktuell* 187, 79–110. John Benjamins.
- Ferrari, Franca. 2005. A syntactic analysis of the nominal systems of Italian and Luganda: How nouns can be formed in the syntax. Doctoral Dissertation, New York University.
- Van Gelderen, Elly. 2007. The definiteness cycle in Germanic. *Journal of Germanic Linguistics* 19:275–308.
- Ghomeshi, Jila, and Diane Massam. 2009. The proper D connection. In *Determiners: Universals and Variation*, ed. J. Ghomeshi, I. Paul, and M. Wiltschko, *Linguistik Aktuell* 147, 67–96. Amsterdam: John Benjamins.
- Giusti, Giuliana. 2008. Agreement and concord in nominal expressions. In *The Bantu-Romance Connection. A Comparative Investigation of Verbal Agreement, DPs, and Information Structure*, ed. Cécile De Cat and Katherine Demuth, *Linguistik Aktuell* 131, 201–238. Amsterdam: John Benjamins.

- Givón, T. 1981. On the development of the numeral ‘one’ as an indefinite marker. *Folia Linguistica Historica* 2:35–53.
- Greenberg, Joseph H. 1957. The definition of linguistic units. In *Essays in linguistics*, chapter 2, 18–35. University of Chicago Press.
- Greenberg, Joseph H. 1966. Some universals of grammar with particular reference to the order of meaningful elements. In *Universals of Language*, ed. Joseph H. Greenberg, 73–113. Cambridge, Mass.: MIT Press.
- Greenberg, Joseph H. 1978. How does a language acquire gender markers? In *Universals of Human Language*, ed. Joseph H. Greenberg, Charles A. Ferguson, and Edith Moravcsik, Vol. III, 47–82. Stanford University Press.
- Greer, Jill D. 2016. Baxoje-jiwere grammar sketch. In *Advances in the Study of Siouan Languages and Linguistics*, ed. Catherine Rudin and Bryan J. Gordon, number 10 in Studies in Diversity Linguistics, 183–230. Berlin: Language Science Press.
- Grégoire, Claire. 2003. The Bantu languages of the forest. In *The Bantu Languages*, ed. Derek Nurse and Gérard Philippson, chapter 19, 349–370. London: Routledge.
- Grimm, Jacob. 1819. *Deutsche Grammatik*. Deutsche Grammatik. Göttingen: Dieterichsche Buchhandlung.
- Grinevald, Collette. 2004. Classifiers. In *Morphologie: Ein internationales Handbuch zur Flexion und Wortbildung*, ed. Geert Booij, Christian Lehmann, Joachim Mugdan, and Stavros Skopeteas, number 2 in HSK 17, chapter 97, 1016–1031. Berlin: Walter de Gruyter.
- Hamel, Patricia J. 1994. *A Grammar and Lexicon of Loniū, Papua New Guinea*. Pacific Linguistics, Series C, 103. Canberra: Australia National University.
- Haspelmath, Martin. 2011. The indeterminacy of word segmentation and the nature of morphology and syntax. *Folia Linguistica* 45:31–80.
- Hawkins, John A. 1978. *Definiteness and Indefiniteness*. London: Croom Helm.
- Hayward, Richard J. 1990a. Notes on the Aari language. In *Omotoc Language Studies*, ed. Richard J. Hayward, 425–493. School of Oriental and African Studies, University of London.
- Hayward, Richard J. 1990b. Notes on the Zayse language. In *Omotoc Language Studies*, ed. Richard J. Hayward, 210–355. School of Oriental and African Studies, University of London.
- Helmbrecht, Johannes. 2016. NP-internal possessive constructions in Hoocak and other Siouan languages. In *Advances in the Study of Siouan Languages and Linguistics*, ed. Catherine Rudin and Bryan J. Gordon, number 10 in Studies in Diversity Linguistics, 423–460. Berlin: Language Science Press.
- Himmelmann, Nikolaus P. 1997. *Deiktikon, Artikel, Nominalphrase: Zur Emergenz syntaktischer Struktur*. Tübingen: Niemeyer.
- Himmelmann, Nikolaus P. 2001. Articles. In *Sprachtypologie und Sprachliche Universalien*, ed. Martin Haspelmath et. al., Vol. 1 of HSK 20, chapter 62, 831–841. Walter de Gruyter.



- Hockett, Charles F. 1947. Problems of morphemic analysis. *Language* 23:321–343.
- Hofling, Charles Andrew. 2017. Comparative Mayan (Yucatec, Lacandon, Itzaj, and Mopan Maya). In *The Mayan Languages*, ed. Judith Aissen, Nora C. England, and Roberto Zavala Maldonado, Routledge Language Family Series, chapter 24, 685–760. London and New York: Routledge.
- Holmes, Philip, and Ian Hinchliffe. 2013. *Swedish. A Comprehensive Grammar*. New York: Routledge, 3rd edition.
- Huang, Chu-Ren, and Kathleen Ahrens. 2003. Individuals, kinds and events: Classifier coercion of nouns. *Languages Sciences* 25:353–373.
- Hudson, Grover. 1997. Amharic and Argobba. In *The Semitic Languages*, ed. Robert Hetzron, chapter 20, 457–485. London and New York: Routledge.
- Hùng Tuong, Nguyen. 2013. The Vietnamese noun phrase. In *Linguistics of Vietnamese. An International Survey*, ed. Daniel Hole and Elisabeth Löbel, Vol. 253 of *Trends in Linguistics*, 57–86. Mouton de Gruyter.
- Hyman, Larry M., and William R. Leben. 2000. Suprasegmental processes. In *Morphologie: Ein Internationales Handbuch zur Flexion und Wortbildung*, ed. Geert Booij, Christian Lehmann, and Joachim Mugdan, Vol. 1 of *HSK 17*, chapter 61, 587–594. Berlin: Walter De Gruyter.
- Janssen, Theo A. J. M. 2004. Deixis and reference. In *Morphologie: Ein Internationales Handbuch zur Flexion und Wortbildung*, ed. Geert Booij, Christian Lehmann, Joachim Mugdan, and Stavros Skopeteas, Vol. 2 of *HSK 17*, chapter 95, 983–998. Berlin: Walter de Gruyter.
- Jenks, Peter. 2015. Two kinds of definites in numeral classifier languages. In *Semantics and Linguistic Theory (SALT)*, ed. Sarah D’Antonio, Mary Moroney, and Carol-Rose Little, Vol. 25, 103–124. LSA and CLC Publications.
- Jenks, Peter, Emmanuel-Moselly Makasso, and Larry M. Hyman. 2017. Accessibility and demonstrative operators in basaa relative clauses. In *Relative Clauses in Cameroonian languages*, ed. Gratien Gualbet Antindogbe and Rebecca Grollemund, 17–46. Berlin: Mouton de Gruyter.
- Jensen, John Thayer. 1977. *Yapese Reference Grammar*. Honolulu: The University Press of Hawaii.
- Julien, Marit. 2005. *Nominal Phrases from a Scandinavian Perspective*. Amsterdam: John Benjamins.
- Kallulli, Dalina, and Antonia Rothmayr. 2008. The syntax and semantics of indefinite determiner doubling in varieties of German. *Journal of Comparative Germanic Linguistics* 11:95–136.
- Kaufman, Terrence with John S. Justeson. 2003. *A preliminary Mayan etymological dictionary*. <http://www.famsi.org/reports/01051/pmed.pdf>.
- Kayne, Richard S. 2010. *Comparisons and Contrasts*. New York and Oxford: Oxford University Press.
- Kayne, Richard S. 2014. Why isn’t *this* a complementizer? In *Functional Structure from Top to Toe: A Festschrift for Tarald Taraldsen*, ed. Peter Svenonius. New York and Oxford: Oxford University Press. Reprinted in Kayne (2010:Ch. 10).

- Klavans, Judith L. 1985. The independence of syntax and phonology in cliticization. *Language* 61:95–120.
- Knobloch, Clemens, and Burkhard Schaefer. 2000. Kriterien für die Definition von Wortarten. In *Morphologie: Ein Internationales Handbuch zur Flexion und Wortbildung*, ed. Geert Booij, Christian Lehmann, and Joachim Mugdan, Vol. 1 of *HSK 17*, chapter 70, 674–692. Berlin: Walter de Gruyter.
- Kolver, U. 1982. Interaktion von nominalen Kategorien am Beispiel der Entwicklung des modernen Bengali. In *Apprehension: Das sprachliche Erfassen von Gegenständen, Teil 1: Bereich und Ordnung der Pänomene*, ed. Hansjakob Seiler and Christian Lehmann, 244–251. Tübingen: Narr.
- Kornfilt, Jaklin. 1997. *Turkish*. New York: Routledge.
- Kramer, Ruth. 2009. Definite markers, phi features and agreement: A morphosyntactic investigation of the Amharic DP. Doctoral Dissertation, University of California, Santa Cruz.
- Kramer, Ruth. 2010. The Amharic definite marker and the syntax-morphology interface. *Syntax* 13:196–204.
- Kroeker, Menno. 2001. A descriptive grammar of Nambikuara. *International Journal of American Linguistics* 67:1–87.
- Law, Danny, and David Stuart. 2017. Classic Mayan: An overview of language in ancient hieroglyphic script. In *The Mayan Languages*, ed. Judith Aissen, Nora C. England, and Roberto Zavala Maldonado, Routledge Language Family Series, chapter 6, 128–174. London and New York: Routledge.
- Le, Van Ly. 1968. So-thao ngu-phap Viet-Nam [sketch of Vietnamese grammar]. Trung-tam Hoc-Lieu, Saigon.
- Lecarme, Jacqueline. 1999. Nominal tense and tense theory. In *Empirical Issues in Formal Syntax and Semantics*, ed. Francis Corblin, Carmen Dobrovie-Sorin, and Jean-Marie Marandin, 2, 333–354. The Hague: Thesus.
- Lefebvre, Claire. 1992. Classification sémantique des verbes du fon et du créole haïtien. Research report prepared for SSHRCC, FCAR and PAFAC on the project *la genèse du créole haïtien: un cas particulier d'investigation sur la forme de la grammaire universelle*, Université du Québec à Montréal.
- Lefebvre, Claire. 1998. Multifunctionality and variation among grammars: The case of determiners in Haitian and in Fongbe. *Journal of Pidgin and Creole Languages* 13:93–150.
- Lefebvre, Claire, and Anne-Marie Brousseau. 2002. *A Grammar of Fongbe*. Berlin and New York: Mouton de Gruyter.
- Leslau, Wolf. 1995. *Reference Grammar of Amharic*. Wiesbaden: Harrassowitz Verlag.
- Leu, Thomas. 2007. These HERE Demonstratives. In *Penn Working Papers in Linguistics: Proceedings of the 30th Annual Penn Linguistics Colloquium*, ed. Tatjana Scheffler, Joshua Tauberer, Aviad Eilam, and Laia Mayol, Vol. 13.1, 141–154. Philadelphia: Penn Linguistics Club.
- Leu, Thomas. 2008. The internal syntax of determiners. Doctoral Dissertation, New York University.

- Leu, Thomas. 2010. The internal syntax of *jeder* 'every'. *Linguistic Variation Yearbook* 9:153–204.
- Leu, Thomas. 2015a. *The Architecture of Determiners*. Oxford and New York: Oxford University Press.
- Leu, Thomas. 2015b. Generalized x-to-C in Germanic. *Studia Linguistica* 69:272–303.
- Leu, Thomas. 2017. *Ein* is *ein* and *that* is *that*: A note on anti-homophony and meta-morphology. In *The Structure of Words at the Interfaces*, ed. Heather Newell, Maire Noonan, Glyne Piggott, and Lisa Travis, chapter 9, 185–208. Oxford and New York: Oxford University Press.
- Linn, Mary Sarah. 2001. A Grammar of Euchee (Yuchi). Doctoral Dissertation, University of Kansas.
- Löbel, Elisabeth. 1996. *Klassifikatoren. Eine Fallstudie am Beispiel des Vietnamesischen*. Universität Köln: Habilitationsschrift. Ms.
- Longobardi, Giuseppe. 1994. Reference and proper names. *Linguistic Inquiry* 25:609–665.
- Lowe, Ivan. 1999. Nambiquara. In *The Amazonian Languages*, ed. R.M.W. Dixon and Alexandra Y. Aikhenvald, 269–292. Cambridge: Cambridge University Press.
- Lynch, John, Malcolm Ross, and Terry Crowley, ed. 2011. *Oceanic languages*. London and New York: Routledge.
- Lyons, Christopher. 1999. *Definiteness*. Cambridge: Cambridge University Press.
- Malchukov, Andrej, and Andrew Spencer, ed. 2008. *The Oxford Handbook of Case*. Oxford and New York: Oxford University Press.
- Manterola, Julen. 2012. Synchronic ubiquity of the Basque article *-a*: A look from diachrony. In *Noun Phrases and Nominalization in Basque. Syntax and Semantics*, ed. Urtzi Etxeberria, Ricardo Etxepare, and Myriam Uribe-Etxebarria, *Linguistik Aktuell* 187, 179–208. John Benjamins.
- Marušič, Franc, and Rok Žaucer. 2006. The definite article TA in Colloquial Slovenian. In *Formal Approaches to Slavic Linguistics 14 (The Princeton Meeting)*, ed. J. E. Lavine et al., 189–204. Ann Arbor: Michigan Slavic Publications.
- Masica, Colin P. 1991. *The Indo-Aryan Languages*. Cambridge: Cambridge University Press.
- Massam, Diane, Colin Gorrie, and Alexandra Kellner. 2006. Niuean determiners: Everywhere and nowhere. In *Proceedings of the ACL annual conference 2006*, ed. Claire Gurski and Milica Radišić.
- Mateo Toledo, Eladio (B'alam). 2017. Q'anjob'al. In *The Mayan Languages*, ed. Judith Aissen, Nora C. England, and Roberto Zavala Maldonado, *Routledge Language Family Series*, chapter 21, 570–609. London and New York: Routledge.
- Mathiassen, Terje. 1996. *A Short Grammar of Lithuanian*. Columbus, Ohio: Slavica Publishers Inc.
- Matthews, Peter. 2014. *The Concise Oxford Dictionary of Linguistics*. Oxford and New York: Oxford University Press, 3rd edition.

- Milner, Judith, and Jean-Claude Milner. 1972. *La morphologie du groupe nominal en allemand*. DRLAV 2. Université de Paris VIII.
- Müller, Gereon. 2002. Remarks on Nominal Inflection in German. In *More than Words: A Festschrift for Dieter Wunderlich*, ed. Ingrid Kaufmann and Barbara Stiebels, 113–145. Berlin: Akademie Verlag.
- Nevis, Joel A. 2000. Clitics. In *Morphologie: Ein Internationales Handbuch zur Flexion und Wortbildung*, ed. Geert Booij, Christian Lehmann, and Joachim Mugdan, Vol. 1 of *HSK 17*, chapter 41, 388–403. Berlin: Walter de Gruyter.
- Newell, Heather, and Maire Noonan. 2018. A re-portage on spanning: Feature portaging and non-terminal spell-out. *McGill Working Papers in Linguistics* 25.
- Newell, Heather, Máire Noonan, Glyne Piggott, and Lisa deMena Travis, ed. 2017. *The structure of words at the interfaces*. New York and Oxford: Oxford University Press.
- Nordlinger, Rachel, and Louisa Sadler. 2004. Nominal tense in crosslinguistic perspective. *Language* 80:776–806.
- Parker, Steve. 1999. On the behavior of definite articles in Chamicuro. *Language* 75:552–562.
- Pfaff, Alexander Peter. 2015. Adjectival and genitival modification in definite noun phrases in Icelandic. A tale of outsiders and inside jobs. Doctoral Dissertation, University of Tromsø.
- Phan, Trang, and Eric T. Lander. 2015. Vietnamese and the NP/DP parameter. *La revue canadienne de linguistique* 60:391–415.
- Pickett, Velma B., Cheryl Black, and Vicente Marcial Cerqueda. 2001. *Gramatica popular del zapoteco del istmo*. 2<sup>nd</sup> edition.
- Piriyawinboon, Nattaya. 2010. Classifiers and Determiner-less Languages: The Case of Thai. Doctoral Dissertation, University of Toronto.
- Polian, Gilles. 2017a. Morphology. In *The Mayan Languages*, ed. Judith Aissen, Nora C. England, and Roberto Zavala Maldonado, Routledge Language Family Series, chapter 8, 201–225. London and New York: Routledge.
- Polian, Gilles. 2017b. Tseltal and Tsotsil. In *The Mayan Languages*, ed. Judith Aissen, Nora C. England, and Roberto Zavala Maldonado, Routledge Language Family Series, chapter 22, 610–647. London and New York: Routledge.
- Postal, Paul. 1966. On so-called ‘pronouns’ in English. In *Report on the 17th annual Round Table Meeting on Linguistics and Language Studies*, ed. Francis P. Dinneen, 177–206. Washington, D.C.: Georgetown University Press. Reprinted as Postal (1969).
- Postal, Paul. 1969. On so-called ‘pronouns’ in English. In *Modern Studies in English: Reading in Transformational Grammar*, ed. David Reibel and Sanford Schane, 201–224. Englewood Cliffs, NJ: Prentice-Hall.

- Rainer, Franz. 2004. From Latin to French. In *Morphologie: Ein internationales Handbuch zur Flexion und Wortbildung*, ed. Geert Booij, Christian Lehmann, Joachim Mugdan, and Stavros Skopeteas, Vol. 2 of *HSK 17*, chapter 157, 1698–1711. Berlin: Walter de Gruyter.
- Rankin, Robert L. 1977. From verb to auxiliary to noun classifier and definite article: Grammaticalization of the Siouan verbs “sit”, “stand”, “lie”. In *Proceedings of the 1976 Mid America Linguistics Conference*, ed. R. L. Brown, K. Houlihan, and A. MacLeish, 273–283. Minnesota: University of Minnesota.
- Rankin, Robert L. 2004. The history and development of Siouan positionals with special attention to polygrammaticalization in Dhegiha. *Sprachtypologie und Universalienforschung* 57:201–227.
- Reesink, Ger P. 1999. *A Grammar of Hatam. Bird’s Head Peninsula, Irian Jaya*. The Australian National University.
- Van Riemsdijk, Henk. 1998. Head movement and adjacency. *Natural Language and Linguistic Theory* 16:633–678.
- Ritter, Elizabeth. 1995. On the syntactic category of pronouns and agreement. *Natural Language and Linguistic Theory* 13:405–443.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar*, ed. Liliane Haegeman, 281–337. Dordrecht: Kluwer.
- Roehrs, Dorian. 2012. Complex determiners: A case study of German *ein jeder*. *Interdisciplinary Journal of Germanic Linguistics and Semiotic Analysis* 14:289–326.
- Roehrs, Dorian. 2015. Inflections on pre-nominal adjectives in Germanic: Main types, subtypes, and subset relations. *The Journal of Comparative Germanic Linguistics* 18:213–271.
- Roehrs, Dorian, and Marit Julien. 2014. Adjectives in German and Norwegian: Differences in weak and strong inflections. In *Adjectives in Germanic and Romance*, ed. Petra Sleeman, Freek Van de Velde, and Harry Perridon, 245–261. Amsterdam: John Benjamins.
- Ross, Malcolm. 2011. Takia. In *Oceanic Languages*, ed. John Lynch, Malcolm Ross, and Terry Crowley, 216–248. London and New York: Routledge.
- Rudin, Catherine, and Bryan J. Gordon, ed. 2016. *Advances in the Study of Siouan Languages and Linguistics*. Number 10 in Studies in Diversity Linguistics. Berlin: Language Science Press.
- Saah, Kofi K. 2010. Relative clauses in Akan. In *Topics in Kwa Syntax*, ed. Enoch Olade Aboh and James Essegbey, chapter 5, 91–108. Dordrecht: Springer.
- Schafer, Edward H. Jr. 1948. Noun classifiers in Classical Chinese. *Language* 24:408–413.
- Schüle, Susanne. 2000. Perception verb complements in Akatek, a Mayan Language. Doctoral Dissertation, Universität Tübingen, Tübingen.

- Schwartz, Linda. 2000. Pronoun and article. In *Morphologie: Ein internationales Handbuch zur Flexion und Wortbildung*, ed. Geert Booij, Christian Lehmann, and Joachim Mugdan, Vol. 1 of *HSK 17*, chapter 76, 783–793. Berlin: Walter de Gruyter.
- Schwarz, Florian. 2009. Two types of definites in natural language. Doctoral Dissertation, University of Massachusetts at Amherst.
- Schwarz, Florian. 2013. Two types of definites cross-linguistically. *Language and Linguistics Compass* 7.
- Štreikaitė, Milena. forthcoming. Strong versus weak definiteness: Evidence from Lithuanian adjectives. In *Definiteness Across Languages*, ed. Ana Aguilar Guevara Julia Pozas Loyo and Violeta Vázquez-Rojas Maldonado, Studies on Linguistic Diversity. Berlin: Language Science Press.
- Simpson, Andrew. 2005. Classifiers and DP structure in Southeast Asia. In *The Oxford Handbook of Comparative Syntax*, ed. Guglielmo Cinque and Richard S. Kayne, 806–838. New York and Oxford: Oxford University Press.
- Studler, Rebekka. 2008. Artikelparadigmen. Zur Morphosyntax und Semantik der Definit-Determinierer im Schweizerdeutschen. Doctoral Dissertation, Universität Zürich.
- Szabolcsi, Anna. 1987. Functional categories in the Noun Phrase. In *Approaches to Hungarian*, ed. István Kenesei, Vol. 2, 167–189. Szeged: Jate.
- Szabolcsi, Anna. 1994. The noun phrase. In *The Syntactic Structure of Hungarian*, ed. F. Kiefer and K. É. Kiss, Vol. 27 of *Syntax and Semantics*, 179–274. San Diego: Academic Press.
- Tema Bautista, Mario Perfecto, and Andrés Cuz Mucú. 2004. *Xtusulal Aatin sa' Q'eqchi': Vocabulario Q'eqchi'*. Guatemala: K'ulb'il Yol Twitz Paxil: Academia de Lenguas Mayas de Guatemala, ALMG, 2<sup>nd</sup> edition.
- Terrill, Angela. 1999. A grammar of Lavukaleve: a Papuan language of the Solomon Islands. Doctoral Dissertation, Australian National University.
- Thompson, Hanne-Ruth. 2012. *Bengali*. SOAS London. John Benjamins.
- Trask, R.L. 2003. The noun phrase: Nouns, determiners, and modifiers; Pronouns and names. In *A Grammar of Basque*, ed. J.I. Hualde and J. Ortiz de Urbina, 92–134. Berlin: Mouton de Gruyter.
- Vangsnes, Øystein A. 1999. The identification of functional architecture. Doctoral Dissertation, University of Bergen.
- Vázquez Álvarez, Juan Jesús. 2011. A grammar of Chol, a Mayan language. Doctoral Dissertation, University of Texas at Austin.
- Weber, Albert. 1964. *Zürichdeutsche Grammatik*. Zürich: Schweizer Spiegel Verlag. Second and revised edition.
- Wheeler, Max W., Alan Yates, and Nicolau Dols. 1999. *Catalan. A Comprehensive Grammar*. London and New York: Routledge.

- Wiltschko, Martina. 1998. On the syntax and semantics of (relative) pronouns and determiners. *Journal of Comparative Germanic Linguistics* 2:143–181.
- Wiltschko, Martina. 2009. What's in a determiner and how did it get there? In *Determiners: Universals and Variation*, ed. J. Ghomeshi, I. Paul, and M. Wiltschko, 25–66. Amsterdam: John Benjamins.
- Wiltschko, Martina. 2014. *The Universal Structure of Categories. Towards a Formal Typology*. Cambridge Studies in Linguistics 142. Cambridge: Cambridge University Press.
- Wolfende, Elmer P. 1971. *Hiligaynon Reference Grammar*. Honolulu: The University Press of Hawaii.
- Wu, Yicheng, and Adams Bodomo. 2009. Classifiers ≠ determiners. *Linguistic Inquiry* 40:487–503.
- Zavala, Roberto. 1992. *El kanjobal de San Miguel Acatán*. Colección Lingüística Indígena, No. 6. México: Universidad Nacional Autónoma de México.
- Zhang, Niina Ning. 2019. Complex indefinites and the projection of DP in Mandarin Chinese. *Journal of East Asian Linguistics* 28.
- Zwicky, Arnold. 1986. German adjective agreement in GPSG. *Linguistics* 24:957–990.