

# Weak and strong articles, diversity, and uniformity

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## 1 Introduction

The category of definiteness is characterized by multiple aspects. As a system for tracking reference in a discourse, definiteness is a contextual category which includes a speaker-hearer interactional aspect. As a semantic category, it is related to quantity and uniqueness, and as a syntactic category to the extended projection of noun phrases. Studying this system on the basis of a single language is bound to be limiting, especially if the language, like English, has limited resources for expressing definiteness. Fortunately, many languages are equipped with two forms of the definite article, such as Jutish Danish (Delsing 1993, cited from Lund 1932, Ejlskjær 1996, Am David 2017), and Sioux (Am David and Sailer 2016, cited from Rood and Taylor 1996), in (1-2).

- (1) a. æ gamel øg  
the old horse ‘the well-known old horse’  
b. de gamel øg  
the old horse ‘the old horse, as opposed to other horses’
- (2) S<sup>u</sup>N<sup>’</sup>ka kiN he’l yuNke’. S<sup>u</sup>N<sup>’</sup>ka k<sup>?</sup>uN thalo’ kiN thebye’.  
dog DEF<sub>w</sub> there lie. Dog DEF<sub>s</sub> meat DEF<sub>w</sub> eat.up  
‘The dog is lying there. The aforementioned dog ate up the meat.’

Jutish Danish usually uses the article *æ*, and only with adjectives a choice between the two articles arises; in this case, *æ* is used anaphorically, and *den* is used in all other contexts. Similarly, in the Sioux example, the first article *kiN* is used in all contexts except anaphora, and the second article, *k<sup>?</sup>uN* is reserved for anaphora. This situation, in which distinct forms mark distinct functions, will be referred to as definite-split, or def-split (Ortmann 2014). The weak/strong terminology was originally meant to capture the morpho-phonological relationship between the two articles within a language, and in many Germanic varieties the ‘weak’ article is a phonologically reduced version of the strong article, as it also is in Sioux. However, this is not necessarily the case, even within Germanic, as observed in Jutish Danish, where the two articles are morphologically independent.

Whereas earlier work on def-split focused on varieties of German, and may have created the impression that def-split is special, geographically confined or genetically-specific, the picture emerging more recently is that it is wide-spread, encompassing diverse genetic groups (Schwartz 2013, Ortmann 2014, Am David 2017). Am David 2017 presents a broad survey of def-split as attested in the following language families: Afro-Asiatic, Atlantic-Congo, Austronesian, Central Sudanic, Germanic, Romance, Slavic, Kartvillian, Hmong-Mien, Mangaway-Maran, Siouan, Uralic, and Creoles. The study of a broader range of languages will inevitably introduce more variation. However, careful study of this variation, using methodologies which combine typological breadth and analytic depth, is beginning to reveal that variation is systematic and constrained.<sup>1</sup> If this continues to be verified by data and analysis, cross-linguistic variation in def-split may ultimately provide an X-Ray glimpse into the underlying structure of definiteness universally, independent of

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<sup>1</sup> There are also languages in which two article forms encode entirely unrelated meanings, such as Tongan, where the forms encode varying degrees of emotional closeness and empathy (Churchward 1953, via Am David 2017), or Danish and Bokmål Norwegian, where the prenominal / post-nominal article distinction appears to be conditioned by syntax only (Delsing 1993). These are set aside.

surface realization. The goal of this chapter is to present some of this variation, define some of its limits, and describe some of the methodologies and models currently in use.

Part of the puzzle presented by the category of definiteness is that the definiteness marker is used in contexts which at first glance appear to be heterogeneous; some contexts seem best characterized in terms of function or use, and others in terms of lexical content and formal representation. In addition to contexts in which definiteness is based on lexical content, in (3), Hawkins 1978 distinguishes a range of different types of use, including those in (4) (from Schwartz 2009: 44):

- (3) a. Unique entities, i.e. *the moon*  
b. Nominals modified by adjectives which contribute uniqueness, i.e. *the best sauce*  
c. Weak definites, i.e. *the bank*
- (4) a. Immediate situation: Put this on top of the fridge.  
(Uttered in a room with exactly one fridge)  
b. Larger situation: The Prime Minister is corrupt.  
(Uttered in a state that has a PM).  
c. Anaphoric: John bought a book and a magazine. The book was expensive.  
d. Bridging/Associative Anaphora: John bought a book today. The author is French.

The first question, then, relates to the relationship between these contexts: What are some of the generalizations governing the use of the definite article, and what is the relationship between these diverse uses? A second question relates to multi-dimensionality and the identification of distinct aspects in the meaning of definiteness: reference, existence, uniqueness, and familiarity. Are these ingredients of meaning best treated as assertions, presuppositions, or implicatures? A third question applies to the syntactic representation of definiteness. These questions about the context of use, meaning, and the syntax of definiteness are in some ways related, and a general theory of definiteness is a theory of the ways in which the context of use of a definite expression is mapped onto semantic and syntactic representations, and vice versa.

Def-splits are handy for addressing these issues because they expose categorical boundaries which are typically obscured in the absence of distinct marking of contexts of use, and the discussion below will focus on what def-splits across languages may reveal regarding each of the questions raised above. In some languages, such as Standard German, Akan and Fon, the strong article (henceforth  $\text{def}_s$ ; and  $\text{def}_w$  for weak article) is reserved for anaphoric contexts. This is by no means the only partition; in Malagasy, for example,  $\text{def}_s$  have both deictic and anaphoric uses, and in other languages, such as N. Frisian Fering and Maori,  $\text{def}_s$  is also used with relative clause modifiers.<sup>2</sup> Nevertheless, there are limits on this sort of variation, and these limitations reveal aspects of the underlying structure of definiteness. As we will see, these particular uses cluster together for a principled reason. Here are some of the ways in which questions about weak and strong articles may be directly related to issues surrounding definiteness in general:

- (5) a. Are there restrictions on the cross-linguistic variation attested in def-splits, and across which dimensions are they observed? This will be addressed in Section 2.  
b. What are the linguistically significant generalizations surrounding weak and strong article use and how are they captured? This is addressed in Section 3.  
c. What can def-split contribute to our understanding of the multi-dimensionality of

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<sup>2</sup> The place of RC modification among the uses of  $\text{def}_s$  is discussed below.

definiteness (i.e. assertion, presupposition, implicature)? This is addressed in section 3.3.

- d. Are the meanings associated with articles encoded lexically, or are they derived inferentially, relative to a scalar array of meanings? This is discussed briefly in 3.4.
- e. Are the categories of meaning and use represented syntactically? Section 4 is devoted to the syntax of weak and strong articles.
- f. What can the division into weak and strong articles tell us about the relationship between articles and pronouns? This is the topic of Section 5.

In what follows, variation in def-splits is examined along two dimensions: (a) variation in terms of surface form: in some languages *def<sub>s</sub>* has the same form as the demonstrative, in other languages it doesn't. Similarly, in some languages the weak form is morphologically independent of the strong form; in other languages it is a reduced version, and in others, it is not even expressed. Form, however, does not dictate coverage, and this is true for both strong and weak forms. (b) Variation in terms of the contexts of use: in some languages, the *def<sub>s</sub>* is reserved for anaphoric use, while in other languages, it is also used in deictic and modification contexts. Despite such differences in the range covered by a particular article, variation is constrained. For example, in no language does *def<sub>s</sub>* cover anaphoric and lexical contexts but excludes situational uses. It is impossible to fully address the theoretical implications of these dimensions of variation for the overall analysis of definiteness. Hopefully the limited landscape of diversity and uniformity presented here will provide a richer empirical basis for considering the underlying structures of definiteness.

The article is organized as follows: Section 2 surveys some of the variation along the dimensions sketched above with an eye to defining limits of variation. Section 3 presents some of the semantic and use-related generalizations that have been proposed to account for the distribution of weak and strong articles cross-linguistically and some of the formal tools that have been used to model them. Section 4 is devoted to the syntax of the weak / strong distinction, and Section 5 to the relation between articles and pronouns. Section 6 concludes.

## **2 Dimensions of Variation**

The survey below is intended to provide a sense of the contours of cross-linguistic variation, but it is not a catalogue of properties. Both in terms of differences, and in terms of limitations on these differences, the scope of variation can perhaps be best appreciated when organized around two dimensions: surface realization and functional partitioning.

### **2.1 Variation in surface realization**

The rich cross-linguistic landscape of definite-split described in Am David 2017 presents substantial diversity in def-split systems, across multiple dimensions. First, there is substantial diversity in the morphological expression of definiteness in split systems, similar to the familiar diversity regarding the morphological expression of definiteness: by free articles, clitics, affixes, and also possessive markers, classifiers, and personal pronouns (Am David 2017: 23).

Alongside binary instances of def-split, there are tertiary systems, as well as splits which involve a single definite article, selectively deployed (Ortmann 2014). In these systems, the articles may be in complementary distribution across contexts of use, or there may be some overlap, where one form will be used across the board, for all functions, and the other one is restricted. In Balearic Catalan and Standard Swedish, for example, the strong form may be used for all functions and the weak form is restricted, whereas in Alemanic varieties, and in Sioux, the weak form may be used for all functions and the strong form is restricted.

Another point of variation has to do with the morpho-phonological relationship between the forms within a given system. First, in tertiary splits, the three forms may be phonologically distinct, as in N. Frisian Fering, Macedonian and Ma'di (Am David 2017), or there may be two strong forms distinguished only by stress, as in Austro-Bavarian and Scandinavian (Leu 2015). Internal variation along similar lines in the type of surface form also occurs in binary-article systems. The unary system in (8) exemplifies a def-split system with a single form.

(6) TERTIARY SYSTEMS

- a. Three phonologically distinct forms, as in N. Frisian Fering, Macedonian, Ma'adi.
- b. Two forms distinguished only by stress, and an additional weak form, as in Austro-Bavarian and Scandinavian: weak article, non-stressed DET, stressed DET.

(7) BINARY SYSTEMS

- a. Strong and weak, in a binary system, where the two are phonologically unrelated, as in North Frisian, West Jutlandic, and Sioux.
- b. Strong and weak where weak is a contracted form of the strong article, like German and Hausa.
- c. Strong and weak, where the strong form is identical to a demonstrative, in Malagasy (Keenan and Ebert 1973), Frisian (Himmelman 1997), Old Georgian and Dutch (Ortmann 2014).

(8) UNARY SYSTEMS

A single overt form, corresponding to a strong form, and used selectively. The weak form is not expressed, as in Old High German, Upper Sorbian and Upper Silesian (Ortmann 2014).

Does this type of variation in the form of articles have an effect on the contexts in which they are used? In other words, does phonological weakness (in (6b), (7b)) or covertness in (8), determine the contextual distribution of a weak article? Does the demonstrative form of the strong article, as in (7c), directly correlate with its contexts of use? If not, and demonstrative form does not dictate demonstrative use, we will gain in our understanding of the difference between the class of articles, including def<sub>s</sub>, and demonstratives.

## 2.2. Variation in contextual partitioning

This dimension of variation refers to the heterogeneous set of contexts in which definite expressions may be used. The list in (9) concatenates the lists in (3-4) and adds modification and names. I will refer to these contextual categories as 'contexts of use', and to this dimension of variation as 'contextual partitioning'.

- (9) Deixis, anaphora, modified, associative anaphora, situational definiteness of various types (immediate, broader, global), lexically given uniqueness, names.

The discussion of variation in contextual partitioning is limited to binary-systems with complementary distribution, since significant variation is observed even within this restricted domain. Most of the discussion of variation in the literature is focused on the contextual coverage of def<sub>s</sub> since it is usually the more selective form. In many languages with a binary split, across distinct language groups and locations, def<sub>s</sub> is reserved for anaphoric use (Schwartz 2009, 2013). However, there are also languages in which the strong form may be used, in addition, in deictic contexts. We also find languages in which, in addition to

anaphoric contexts, *def<sub>s</sub>* may be used when a modifier, such as a relative clause, further restricts the reference of the NP (see Ortmann 2014, who calls this use ‘autophoric’). Finally, there are languages in which *def<sub>s</sub>* is used in all three contexts. This is not to say that anything goes: the combination of deictic and autophoric uses, to the exclusion of anaphoric use, is not attested. These points of variation are summarized below:

- (10) a. Anaphoric only: Hausa, Fon, Jutlandic Danish, Sioux, Lakota.
- b. Anaphoric and deictic: Malagasy
- c. Anaphoric and autophoric: Alemannic varieties, Maori, and Norwegian.
- d. Anaphoric, deictic and autophoric: Fering and Austro-Bavarian.
- e. #Deictic and autophoric

These contexts have a common core. They are all types of use in which uniqueness is under-determined by the content of the nominal expression (more precisely, nominal plus adjective), and further indications are necessary. These further indications may be contextual, such as pointing, in the deictic use, or via an antecedent, in the anaphoric use. But these further restrictions may also be given by lexical content. The addition of a relative clause modifier, further restricting the reference of the expression, leads to uniqueness in this way: in a context which includes multiple boys, ‘the boy’ will not refer uniquely, but ‘the boy who I talked to’ may. (see Section 3 and Ebert 1971, Löbner 1985, 2011, Wolter 2006, Wiltschko 2010, 2013 for related notions of pragmatic uniqueness).

The variation in this domain is clearly limited. First, *def<sub>s</sub>* is always used in anaphoric contexts. Second, the additional contexts of use, which may be associated with a particular strong article, are closely related. Importantly, we do not find articles that are used in anaphoric contexts, and in contexts in which uniqueness is guaranteed lexically, but not with modified NPs. This suggests that the array of functions, or contexts, included in the realm of definiteness are structured in a particular way, with some contexts closer to each other than others, as in the uniqueness scale of Löbner 1985, 2011 and Ortmann 2014, and in the semantic map proposed in Am David 2017.<sup>3</sup>

We can now address one of the questions raised at the end of the previous section: does demonstrative form correlate with demonstrative use? Since the stressed form is often the demonstrative itself, we must limit attention to non-stressed versions of the demonstrative form. In addition, we will assume that demonstrative use is characterized as the need for additional indications, beyond lexical nominal content, to identify the referent uniquely, including pointing, anaphora, and RC modification (Wolter 2006). We have seen above that strong articles may be used deictically, to pick out a particular referent when more than one is compatible with the content of the nominal. Does *def<sub>s</sub>* need to bear the form of a non-stressed demonstrative for this to be possible? There appears to be no correlation between demonstrative form and deictic use: there are strong articles which do not have a demonstrative form and allow deictic use, as in Fering and other Alemannic varieties. In Norwegian, for example, the prenominal article is distinct from the demonstrative pronouns. In one sense, it is conditioned syntactically, since it is obligatory when an intervening adjective is present. However, it is obligatory, even in the absence of an intervening modifier, and in addition to the suffixed article, when uniqueness is established contrastively or deictically (Leu 2015). This function of the prenominal article differs from the ‘true’ demonstrative series, which include a locative meaning component. Ortmann 2014 gives the example in (12) as the form associated with deictic use.

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<sup>3</sup>These representations are discussed in section 3.

- (11) a. Free article: den/det/de  
 b. Demonstratives: denne/dette; den/det här; den/det där.

- (12) den (hvite) bilen  
 DEF white car-DEF  
 'the (white) car'

There are also non-stressed demonstrative forms which allow only anaphoric use, as in Dutch (Ortmann 2014). In the following passage taken from Remco Campert's *Het leven is verrukkelijk*, the sortal noun *rust* is introduced by the indefinite article, and then in its next occurrence refers anaphorically, without any accompanying deictic use. This is indicated in the non-stressed strong form *die*. Despite its traditional labelling as a demonstrative, the unstressed strong form occurs in the context of exclusive anaphoricity.

- (13) Langzaam stroomt de middag verder. Wat een rust, e nook wat een opwinding  
 slowly streams the noon further. What a quiet, and also what an excitement  
 in **die** rust.  
 in DEF<sub>s</sub> quiet.

The coverage of def<sub>s</sub> does not, therefore, appear to be directly related to its surface form. This does not imply that there is no connection at all between strong definiteness and demonstrativity; the contexts covered by def<sub>s</sub>, in (10), are all particular instantiations of demonstrative use (Diessel 1999, Lyons 1999, Wolter 2006, Sichel and Wiltschko 2018). Whereas true demonstratives will typically be used in *all* of these contexts, the strong article may be more selective, but it is selective within a demonstrative range. This reflects processes of grammaticalization and diachronic change: often a definite article begins as a demonstrative, limited to the uses in (10), and with time, it extends to contexts in which uniqueness may be determined lexically rather than contextually. In other words, the demonstrative becomes a definite article.

### 3 Use-related generalizations and semantic accounts

The survey of functional partitioning in 2.2 demonstrates that the cut-off point between weak and strong articles is not cross-linguistically uniform and different generalizations have been proposed to account for this. While there is significant cross-linguistic variation, it is constrained. With the broadening of empirical perspective, there is an accompanying shift from generalizations about particular languages, to generalizations regarding the scope of variation.

#### 3.1 Strong familiarity

If a language or variety marks only one function with the strong article, that will be the anaphoric function. This was already observed for Jutish Danish and Sioux, in (1-2). It also holds for Standard German (Schwartz 2009, 2013), Hausa, Lakota, and Alemannic, Austro-Bavarian, and Central Franconian varieties of German (see Schwartz 2013, Am David 2017). In (14) from Zurich German, def<sub>s</sub> is used for an anaphoric definite, and is reported to be restricted to this use (from Studler 2011: 100, via Am David 2017). A similar situation is observed in Standard German. Here the morphological difference between weak and strong articles is restricted to certain prepositions, where def<sub>w</sub> cliticizes to the preposition and the strong article is independent. Only the strong article is compatible with anaphoric use, and it is reported that def<sub>s</sub> is used almost exclusively in this way (Schwartz 2009:30 ex. (23)).

- (14) Vor de Tüür schtoot e Maa. **Dä** Maa, wo übrigens  
 in.front.of DEF<sub>w</sub> door stand.3sg INDEF man. DEF<sub>s</sub> man who by.the.way  
 geschter scho glüüet hat...  
 yesterday already called had  
 ‘In front of the door stood a man. The man, who by the way had called yesterday...’
- (15) Hans hat einen Schriftsteller und einen Politiker interviewt. Er hat  
 Hans has a writer and a politician interviewed. He has  
 \*vom / **von dem** Politiker keine interessanten Antworten bekommen.  
 From-DEF<sub>w</sub> / from DEF<sub>s</sub> politician no interesting answers gotten  
 ‘Hans interviewed a writer and a politician. He didn’t get any interesting answers from  
 the politician.’

Similarly, when a language has only one article which is used selectively, the single article is often associated exclusively with anaphoric use, as in Akan, Fon, Hidasta, Mangarayi, Mauritian Creole, and Mupun (Schwartz 2013, Am David 2017). The strong article in Mupun is most typically used with anaphoric definites (Frajzyngier 1993: 169 via Am David 2017).

- (16) Kat jep mis mo yo wet mo däm n -tul siar fur  
 when young man PL go spend.day PL go at-house friend -3PL  
 dan jirap mo n -tul **nə...**  
 and girls PL at- house DEF<sub>s</sub>  
 ‘If young men go to spend the day at their friends’ house and there are girls in the  
 house...’

The analysis in Schwartz 2009, 2013 captures this type of distribution.<sup>4</sup> It also aims to reconcile two dominant approaches to definiteness, by assigning one of them to each article. On one approach, definite expressions are referential and express acquaintance, via association to a previously introduced discourse referent (Strawson 1950, Kempson 1975, Kamp 1981, Heim 1982, among many others), and this holds of def<sub>s</sub> in def-split systems. On another dominant approach, definite expressions are quantificational, and express uniqueness (Russell 1905, Neale 1990), and this is the treatment of def<sub>w</sub>.

The account is developed in terms of situational semantics, in a way which minimizes the differences between the two articles. Both articles introduce a situation pronoun for the purpose of domain restriction. This is necessary because, for example, a definite expression such as *the boys* refers to all of the boys within a particular domain or situation, rather than to all of the boys in the world. In addition, the strong article bears an index argument which introduces an individual variable, and this is what allows the strong article to be used anaphorically.

Having a contextual restrictor built into the semantics of def<sub>w</sub> can account for the contextual nature of situational uniqueness, such as *the fridge* in a kitchen with a single fridge. However, as noted in Wiltschko 2010, a generalized restrictor associated with all definiteness may create a problem for those uses of the weak article which appear to not be contextual at all, such as generics and idioms, as in the following examples in Austro-Bavarian German (Wiltschko 2010: 8, exs. 19-20).

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<sup>4</sup> See also Krifka 1984 for an earlier distinction along similar lines, between W-definiteness, where uniqueness is based on common world knowledge of the speaker and hearer, and T-definiteness, where it is based on the prior introduction of a referent in an ongoing text.

- (17) a. Da/#dea Wal wird boid aussteam  
 DET<sub>w</sub>/DET<sub>s</sub> whale will soon go.extinct  
 ‘The whale will soon go extinct.’  
 b. D/#die Wale wean boid aussteam  
 DET<sub>w</sub>/DET<sub>s</sub> whale.PL will soon go.extinct  
 ‘The whale will soon go extinct.’
- (18) Hiatz geht’s um d’/#die Wuascht  
 now goes’it about DET<sub>w</sub>/DET<sub>s</sub> sausage.  
 Lit.: Now, it’s about the sausage.  
 ‘It’s now or never.’

These contexts seem problematic for a theory which has domain restriction built into all definite articles. As Wiltschko 2010 notes, it is precisely the absence of contextual restriction which derives a generic interpretation in (17), and idioms couldn’t plausibly involve contextual restriction since, to begin with, they do not refer to particular individuals. We now turn to theories which aim to model cross-linguistic variation in the coverage of articles in def-split systems.

### 3.2 The Uniqueness Scale

Ortmann 2014 is the first attempt to offer an explanatory model of cross-linguistic variation in the coverage of the weak and strong article. Ortmann models variation on the uniqueness scale developed in Löbner 1985, 2011. Löbner’s scale situates different types of definite use on a continuum of types of uniqueness, ranging between two poles which Löbner calls semantic and pragmatic uniqueness. In semantic uniqueness, the descriptive content of the noun phrase is sufficient to establish uniqueness, as with lexical individual and functional nominals (*the moon*, *the measles* and *John’s mother* respectively), proper names, and pronouns. In pragmatic uniqueness, the descriptive content is not sufficient and other indications are necessary in order to establish uniqueness, such as anaphora, deixis, or modification, as discussed above (see also Ebert 1971, Wolter 2006, Wiltschko 2010, 2013, among others). In the following scale, SN stands for sortal noun, FN for functional nominal, and IN for individual nominal (from Ortmann 2014: 314 ex. (31)).

- (19) Deictic SN < anaphoric SN < SN with RC < Definite Associate Anaphors < non-lexical FNs < lexical IN/FN < proper names < 3<sup>rd</sup> person pronouns < 2<sup>nd</sup> and 1<sup>st</sup> person pronouns

Crucially, pragmatic uniqueness is a broader category than ‘anaphoric use’, and it encompasses all the contexts of use characteristic of demonstratives. Furthermore, semantic and pragmatic uniqueness are not conceived of as discrete categories, and all the sub-contexts that these notions encompass are viewed on a continuum. As we move from the top/left of the scale to the bottom/right, we move from noun phrases headed by sortal nouns, which denote an extremely broad choice of referents, towards progressively more limitations on potential referents, ending with lexical individual and functional nominals (*the life* or *the measles* for individual nominals, *John’s mother* for functional nominals) proper names, and pronouns at the very end.<sup>5</sup> The middle of the scale is populated by types of use which progressively rely

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<sup>5</sup>The ordering of contexts on the scale is derived semantically, from the logical type of the nominal, based on a four-way characterization of nominals that is based on uniqueness and

on exclusively nominal content to establish uniqueness as we move right-ward: sortal nouns (SNs) modified by a relative clause (*the woman who I saw*); definite associate anaphors (DAAs) such as the relation between *the author* and *article* in *I read an article about the asylum seekers yesterday. The author was from Sudan*; and non-lexical functional nouns (FNs), such as *the best sauce*, *the highest mountain*, where uniqueness is determined inherently, but due to properties of the adjectival modifier.

The scale makes substantive predictions about how two articles may differ within a given language, and how languages may differ from each other. This is because the types of use are arranged along a single dimension (i.e. uniqueness), where each type of use is related to the one to its right and the one to its left in the same way. Ortmann 2014 argues for a novel generalization across two situations: (i) systems with a single article, used selectively, and (ii) binary splits, in which two overt articles split the scale.

(20) Split I: There are languages in which the article marks only the top/left part of the scale, whereas the rest remains unmarked.

Split II: There are languages with two articles. One article will express pragmatic uniqueness and the other expresses semantic uniqueness. The split will occur somewhere in the middle of the scale, between semantic and pragmatic uniqueness, subject to some (restricted) cross-linguistic variation.

The scale of uniqueness restricts the domain of cross-linguistic variation for both types of def-split, and viewing these two situations as closely related strengthens the case for the explanatory potential of the uniqueness scale. Focusing on the bottom of the scale, a language which uses definite articles with proper names, for example, will also use the article for all categories above proper names, but not with pronouns. Focusing on the very top of the scale, languages that do not have articles at all can still have a demonstrative that is always deictic. If a language has a strong article or demonstrative to mark function F, it will mark the function to its left with the strong article as well. The fact that the anaphoric use is further to the right reflects the fact that this function is shared with ordinary definites. Ortmann 2014 shows how the model can also account for the general patterns of grammaticalization and language change in this domain, and, most generally, for the relationship between demonstratives – strong articles – weak articles – no article (Schroeder 2006, Faarlund 2009). To the extent that  $\text{def}_s$  originates as a demonstrative, and the demonstrative contexts of use are at the top of the scale, the scale reflects the spread in the use of the article, over time, from functions at the top of the scale, towards functions at the bottom, which require less additional indications to guarantee uniqueness. This is why if a language has a single article, it will be  $\text{def}_s$ , covering contexts at the top of the scale.

The system also captures the possibility that  $\text{def}_w$  is a reduced version of  $\text{def}_s$ . In Löbner's system, there is a correlation between type of uniqueness and type of nominal: contexts which are associated with pragmatic uniqueness are those which contain sortal nouns, which denote functions, and these require type shifting when they denote uniquely. Strong articles, in this system, are markers of type shift from  $\langle e, t \rangle$ , the type of SN, to  $\langle \langle e, t \rangle, e \rangle$ , and weak articles are semantically vacuous. Given expressions such as *finish school*, *shake hands*, *these items differ in shape*, it seems reasonable that decrease in the form of the article should correlate with a decrease in its role as 'type shifter' (Ortmann 2014: 296). Decrease in article form, to the point of complete absence of overt form, is therefore expected when moving rightward on the scale.

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argument-taking capacity of the nominal (see Löbner 1985, 2011 and Ortmann 2014 for details).

### 3.3. Multi-dimensional definiteness

The typological scope is further extended in Am David 2017 to more languages and sub-types of def-split, and based on this rich typological landscape Am David and Sailer 2017 develop a multi-dimensional approach to definiteness. The information that is subsumed under the iota-operator is partitioned into three dimensions of meaning: an assertion component, which corresponds to the extension of the expression, a presupposition of existence, and a series of conventional implicatures which derive the uniqueness requirement:

- (21) [The composer] was talented
- a. Reference: Some individual who is a composer.
  - b. Existence: There exists a composer
  - c. Uniqueness: There exists at most one composer

This division forms the basis of an account in which cross-linguistic variation is restricted to component (c); the assertion and presupposition components are cross-linguistically uniform. Am David and Sailer 2017 analyze uniqueness as a conventional implicature (henceforth, CI; following Horn 1972, Karttunen and Peters 1979, Abbot & Horn 2013), more precisely a series of CIs.<sup>6</sup> In the spirit of the sub-divisions in Löbner 1985, 2011 and Ortmann 2014, and with the same goal of accounting for variation, the uniqueness dimension is divided into smaller inferential sub-categories, each one representing a CI:

- (22) A. Maximality – uniqueness in a contextually given reference situation. This inference covers situational uniqueness.  
B. General Knowledge uniqueness – Generic quantification over situations. This inference covers lexical uniqueness, kind-referring definites, and most types of associative anaphora.  
C. Anaphora uniqueness – There is a unique referent for the description in the reference situation, restricted to textually introduced discourse referents.

Whereas all definites encode the Maximality CI in A, only def<sub>s</sub> encodes the Anaphora CI in C; def<sub>w</sub> encodes A and B. Based on a broad typological survey, Am David 2017 argues for three separate uniqueness inferences structured in a semantic map, in (23).

- (23) B --- A --- C

The semantic map represents relative similarity in meaning: A is closer to B and to C than B is to C; relative similarity in meaning captures restrictions on the mapping from form to meaning. In this respect the map resembles the uniqueness scale discussed above.

In this ternary division each inferential category may correspond to a distinct article form. The categories may also cluster together under a single form, as represented in the map. Languages can isolate B, with A and C clustering under a single form, as in Akan (Arkoh 2011, Arkoh and Matthewson 2013); languages may also isolate C, with A and B clustering under a single form, as in Hausa, Fon, Jutish Danish, Sioux, Lakota, (Schwartz 2013). However, no language can cluster B and C under a single form to the exclusion of A. The map also represents possible overlaps in weak and strong forms: the weak form may express

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<sup>6</sup> For a treatment of uniqueness as presuppositional see Strawson 1950, Heim 1982, Kadmon 1990; for a treatment as a conversational implicature see Kempson 1975, Szabo 2000, Ludlow & Segal 2004.

B-A, and the strong form all categories, as in Swedish and Icelandic; and conversely, the weak form may express all categories, with the strong form reserved for C, as in Alemanic (Am David 2017).<sup>7</sup>

We now turn to the evidence for a treatment of the division into types of uniqueness in terms of a series of CIs. Am David and Sailer 2017 base their argument on two diagnostics that set CIs apart from presuppositions: independence of Truth-value, and in the domain of projection, the validity of the inference within the scope of negation or an attitude predicate. For reasons of space, the presentation is limited to the second diagnostic. First, note the contrast below, between a presupposition embedded under the attitude predicate (that Bill had smoked before), in (24a), and an appositive, a CI by hypothesis (Tonhauser et. al. 2013: 92). The fact that the appositive does not lead to contradiction indicates that it need not be valued within the scope of the attitude predicate. Horn and Abbott (2013: 341) demonstrate a related difference for definites, between the existence inference, which may be interpreted in the scope of negation, and the uniqueness inference, which holds even in the context of negation, in (25b). If presuppositions may sometimes be plugged by an attitude predicate or negation, and CIs may not (Potts 2005), this indicates that existence is presupposed whereas the uniqueness component is a CI, and projects higher (see also Coppock and Beaver 2015).

(24)a. #Jane believes that John has stopped smoking and that he has never been a smoker.

b. Jane believes that Bill, who is Sue's cousin, is Sue's brother.

(25) a. The king of France isn't bald – (because) there isn't any.

b. #The consul of Illocutia isn't bald – (because) there are two of them.

Am David and Sailer 2017 demonstrate similar effects for  $def_w$  and  $def_s$  in Standard German. The existence inference can be cancelled with  $def_w$ , in (26a), but the uniqueness inference may not, in (26b) (Am David and Sailer 2017:p. 25 ex. 47)

(26) a. Alex ist (natürlich) nicht **zum** König von Frankreich gegangen.

- Frankreich hat gar keinen König.

‘Of course, Alex did not go to the King of France. France doesn't have a King.’

b.#Alex ist (natürlich) nicht **zum** Konsul von Illukutien gegangen.

- Illukutien hat zwei Konsuln.

‘Of course, Alex did not go to the consul of Illocutia. Illocutia has two consuls.’

For  $def_s$ , the background context is based on situational uniqueness. In this context, we know that Ben and Chris are students, but Alex is not. If Ms. Meyer, their teacher, is talking about Ben and Alex, she can use  $def_s$  to refer to Ben as ‘the student’, but not if she's talking about Ben and Chris, where both are students, and uniqueness doesn't hold. This is true even when the sentence is negated, indicating that situational uniqueness, associated with the strong article, projects beyond negation:

(27) Gestern habe ich Ben und Alex / #Chris kontaktiert. Es stimmt aber nicht, dass ich  
Yesterday have I Ben and Alex / Chris contacted. It is true but not that I  
bei **dem** Studenten angerufen haben.

at the.dat student called have

‘Yesterday, I contacted Ben and Alex / #Chris. It is, however, not true that I called the student.’

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<sup>7</sup> See Am David 2017 for arguments for the ternary division.

### 3.4 Summary

Once the scope of investigation is broadened to cover a wider range of languages, and the theoretical goal shifts from devising a mechanism for a particular context to accounting for the permitted range of def-split variation, it becomes more challenging to compare theories directly. The way in which the semantic map in Am David 2017 encodes closeness and remoteness of meanings is not significantly different from Löbner's scale and follows the same logic as Ortmann 2014. The accounts differ, however, regarding whether the differences between the articles are represented semantically or by CI inferences. The choice between a semantic mechanism and a CI mechanism is surely an empirical issue, but a lingering question is whether there is a necessary connection between the CI account and the kind of division in meaning that is represented by the semantic map, as opposed to a simple uni-dimensional scale. To the extent that the CI analysis is correct, could it equally be modeled by the uniqueness scale? Am David and Sailer 2017 argue that the ternary division of CIs is paired with a three-way division in lexical specification of the articles. Such lexical encoding of meaning seems to be required if the 'conventional' part of a CI is associated with lexical content.

It is possible that the scalar account does not require article meaning to be encoded lexically. The meaning distinctions are already encoded in the scale, and the scale is pre-determined by the semantic component of the language faculty. We have seen that the choice between a demonstrative and non-demonstrative form for the strong article has no effect on its range of meanings, and this may suggest that function is not directly derived from form. If so, the scalar structure, with certain modifications, may lead to a non-lexical treatment of the semantics of articles.

## 4 Syntax

The choice between  $\text{def}_w$  and  $\text{def}_s$  may also have syntactic effects, and this suggests that there are syntactic differences between the articles. Brugger and Prinzhorn 1996:5 observe that in Austro-Bavarian German only DPs headed by  $\text{def}_w$  allow sub-extraction.

- (28) a. Von  $wem_1$  host du [s Possbild  $t_1$ ] nit gsegn?  
 Of whom have you  $\text{det}_w$  passport.foto not seen?  
 'Whose passport photo did you not see?'  
 b. \*Von  $wem_1$  host du [des Possbild  $t_1$ ] nit gsegn?  
 Of whom have you  $\text{det}_s$  passport.foto not seen?

Brugger and Prinzhorn 1996 argue that the weak/strong article distinction corresponds to distinct syntactic structures within an articulated DP, which contains, beneath a DP layer, a projection associated with determiner agreement,  $\text{D}_{agr}P$ . Whereas  $\text{def}_w$  corresponds to  $\text{D}_{agr}^0$  and projects  $\text{D}_{agr}P$ ,  $\text{def}_s$  is associated with an additional DP layer, and is derived by the amalgamation of  $\text{D}_{agr}^0 + D^0$ :

- (29)  $\text{DEF}_s$ : [ $\text{DP}$   $D^0$  [ $\text{D}_{agr}P$   $\text{D}_{agr}^0$ ] ....  
 $\text{DEF}_w$ : [ $D$ - $\text{agr}P$   $\text{D}_{agr}^0$ ] ....

The extra DP associated with the strong article acts as a barrier to extraction, and in the absence of this layer of structure, extraction is permitted.

Categories lacking a DP layer have been claimed to be more permeable to extraction than full DPs (Bowers 1988, Corver 1992, Bošković 2005, 2008, among others) and this may ultimately be correct. However, questions about the phase-status of DP and how its internal

projections interact with extraction are not yet settled, the therefore the pattern of extraction cannot count as strong evidence for the presence or absence of a full DP. It is possible, for example, that there is a projection *within* DP that is also a locality-phase (Bošković 2017, Sichel 2018). If this is correct, case the sub-extraction contrast may attest to the presence/absence of a lower nP projection, as argued in Wiltschko 2010/2013.

On Wiltschko's analysis, weak and strong articles are both realizations of  $D^0$ . They differ in terms of selection:  $\text{def}_s$  selects nP, which contains NP, whereas the weak article directly selects NP.

- (30)  $\text{DEF}_s$ :  $[_{DP} D^0 [_{nP} n^0 [_{NP} \dots$   
 $\text{DEF}_w$ :  $[_{DP} D^0 \quad \quad [_{NP} \dots$

This accounts for the extraction asymmetry, if lower, DP-internal projections, are also phases. Wiltschko 2010, 2013 argues that the difference in selection, whether  $D^0$  selects an nP or not, also determines the availability of contextual restriction, represented as a contextual variable C, internal to DP (Von Stechow 1994, Stanley & Szabo 2000, Gillon 2006). A contextual variable is necessary for what has been characterized above as pragmatic uniqueness: the situation in which nominal content alone is insufficient to guarantee uniqueness and further indications are necessary. Based on the syntax of RCs and their level of attachment within DP, Wiltschko 2010, 2013 identifies the position of C as adjoined to nP. The absence of nP therefore implies the absence of contextual restriction.

The evidence for a syntactic characterization of the contextual variable which derives domain restriction comes from a finer typology of relative clauses and a distinction between restrictive relative clauses (RRCs) and descriptive relative clauses (DRCs), where weak articles are only compatible with DRCs. Consider the following two background contexts for introducing an RC. In the first, all mailmen are under discussion and the RC provides additional content to identify the mailman that A wants to talk about, and this is a RRC, compatible only with a DP headed by  $\text{def}_s$ .<sup>8</sup> In the second example, where the mailman is situationally unique, the RC does not serve to identify the referent under discussion, and is referred to as a DRC, compatible only with a DP headed by  $\text{def}_w$  (Wiltschko 2010:2, ex. 3-4). This follows if  $\text{def}_w$  is used when the uniqueness of the referent requires no further contextual indications, and  $\text{def}_s$  is associated with such further indications.

- (31) *Context: A and B are having a discussion about the retirement age of mailmen, and other civil servants. A complains:*

Die Briaftröga und die Leit vo da Muehobfua gengan vü'z boid in pension. Zum Beispü,...

'Mailmen and garbage collectors retire way too early. For example...'

**dea** Briaftröga dea was bei uns austrogn hot is jetzt in Pension.

$\text{det}_s$  mailman who COMP at us delivered has is now in retirement

'the mailman who delivered in our neighborhood is now retired.'

- (32) *Context: the mailman who has been delivering mail in the neighborhood in the last ten years is retired. Everyone knows this mailman. A and B have been living in this neighborhood. A tells B:*

Wasst eh, **da** Briaftröga (wos bei uns austrogn hot) is jetzt in Pension.

know prt  $\text{det}_w$  mailman comp at us delivered has is now retired

'You know, the mailman who delivered our mail is now retired.'

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<sup>8</sup> The second occurrence of *dea* in (31) is as a relative pronoun, glossed therefore as 'who'.

The observation that extraction and a fine-grained modifier typology are affected by modifier choice strongly suggests that the difference between the articles is represented syntactically, possibly in way which also interacts with contextual restriction.

## 5 Articles and Pronouns

In some languages, articles may also be used as pronouns, and this has sometimes been understood to indicate that personal pronouns are concealed definite descriptions with an overt determiner and covert NP (Postal 1966, Elbourne 2005, among others), with broad implications for the semantics of pronouns and the nature of anaphora. Given the pronominal use of articles, a question which arises in the present context is whether there exist pronominal versions of both  $\text{def}_w$  and  $\text{def}_s$ , and if so, how this might inform the debate about the underlying structure of pronouns. We briefly consider the possibility that the two articles may correspond to distinct pronouns, and in other words, that there are pronominal paradigms which can be characterized in terms of definiteness split. In varieties of German, the definite article can also be used as a pronoun, often called a d-pronoun (Wiltschko 1998, Bosch, Rozario and Zhao 2003, Bosch and Umbach 2007, Hinterwimmer 2015, among others). The d-pronoun has the form of the strong article, in (33b). The form corresponding to  $\text{def}_w$  cannot be used in this way.

- (33) a. **Die** Frau hat an Hustn.  
 $\text{def}_s.\text{f.s}$  woman has a cough  
 ‘The woman has a cough.’  
 b. **Die** hat an Hustn.  
 $\text{def}_s.\text{f.s}$  has a cough  
 ‘That one has a cough.’  
 c. **\*D** hat an Hustn.  
 $\text{def}_w.\text{f.s}$  has a cough

Patel-Grosz and Grosz 2017 argue, nonetheless, that both article forms have pronominal versions:  $\text{def}_s$  corresponds, unsurprisingly, to the d-pronoun in (33b), whereas the underlying form of  $\text{def}_w$  corresponds to the personal pronoun. This implies that all pronouns contain a functional head with the semantics of a definite article, either  $\text{def}_s$  or  $\text{def}_w$ . Four types of evidence are presented in favor of this correspondence: (a) context of use, in particular a restriction to the anaphoric context, (b) modification by a relative clause, (c) phonological contraction, (d) co-occurrence with an overt NP complement. While these diagnostics clearly support a correspondence between  $\text{def}_s$  and d-pronoun, a similar correspondence between  $\text{def}_w$  and personal pronoun seems more difficult to sustain.

For reasons of space, we focus on the first two diagnostics. Starting with (a), Patel-Grosz and Grosz 2017 argue that both  $\text{def}_s$  and d-pronouns are restricted to anaphoric contexts, and are impossible in non-anaphoric contexts such as (34) (Patel-Grosz and Grosz 2017, ex. 33/34a, the former adapted from Schwartz 2009:40).

- (34) a. Der Empfang wurde {**wom** / #**won dem**} Bürgermeister eröffnet.  
 the reception was by. $\text{det}_w$  / by  $\text{det}_s$  mayor opened  
 ‘The reception was opened by the mayor.’  
 b. Wenn ich schwanger werde, werde ich {**es** / #**das**} auf jeden Fall behalten.  
 if I pregnant become will I it / #d-pron on every case keep  
 ‘If I get pregnant, I will definitely keep it.’

However, the opposite does not seem to hold: while DPs with  $\text{def}_w$  are excluded in anaphoric contexts (as discussed above), personal pronouns can clearly be used anaphorically. Turning to the second diagnostic, we have seen above that  $\text{def}_s$  may be associated with a restrictive relative clause (RC) modifier, and this holds of d-pronouns as well:

- (35) **Die** [<sub>CP</sub> die mit der Dani befreundet ist ]] glaubt, die ist gross.  
 $\text{def}_s.\text{f.s.}$  who with the Dani friended is believe.3s  $\text{def}_s.\text{f.s.}$  is.3s tall  
 ‘The one who is friends with Dani thinks she’s tall.’

In contrast, a DP with  $\text{def}_w$  cannot be modified by a restrictive RC, nor can a personal pronoun (Patel-Grosz and Grosz 2017:ex.40). However, as shown in (32) above,  $\text{def}_w$  in Austro-Bavarian German and other varieties is compatible with an RC, when the RC head is uniquely identified and the RC is not restricting. However, this kind of RC cannot be used to modify a personal pronoun. The example without the RC is perfectly fine in this context, showing that the problem is due to the RC attachment. The ungrammaticality of (36a) is unexpected if a personal pronoun corresponds to  $\text{def}_w$ .

- (36) *Context: The mailman who has been delivering mail in the neighborhood in the last ten years has retired. Everyone knows this mailman. A and B have been living in this neighborhood. They are sitting in their living room when they hear the mail drop. A tells B:*  
 a. \*Wasst eh, ea wos bei uns austrogn hot) geht jetzt in Pension.  
     know prt he comp at us delivered has is now retired  
 b. Wasst eh, ea geht jetzt in Pension.  
     know prt he is now retired  
     ‘You know, he is now retired.’

Another property which is problematic for the expectation for a correlation between  $\text{def}_w$  and personal pronouns is the possibility for co-occurrence with an overt NP complement; a personal pronoun may not be accompanied by an overt NP.

- (37) **{Die / \*sie}** Frau ist gross.  
 $\text{d-f.s.}$  / she woman is tall  
 ‘The woman is tall.’

The above considerations suggest that while  $\text{def}_s$  seems to have a pronominal counterpart in the d-pronoun,  $\text{def}_w$  is probably not part of the underlying structure of personal pronouns. Does this mean that it doesn’t have a pronominal counterpart? It is possible that the  $\text{def}$ -split observed with articles is internal to the class of d-pronouns, and that there are, in fact, two d-pronoun classes. Sichel & Wiltschko 2018 examine the meaning and distribution of d-pronouns in more detail and identify an internal division which seems strikingly similar to the weak/strong article division, and in particular the distinction between pragmatic and semantic uniqueness discussed above.

Setting aside the broader question regarding the status of these two versions of the d-pronoun, and whether they constitute pronominal classes, or merely uses, they can be descriptively characterized as follows. In one version, the d-pronoun can be stressed and is used to discriminate, accomplished in a variety of ways: deictically, with pointing; anaphorically, with an antecedent; autophorically, with the addition of a modifier; or contrastively, with stress; this set of uses is identical to the uses compatible with  $\text{def}_w$  and

characterized as pragmatic uniqueness: when further indications are necessary to uniquely identify the referent. The other type of d-pronoun is necessarily non-stressed, and is used only when there exists in the context a uniquely salient individual, in other words, when there is no accompanying discrimination. This use closely resembles *def<sub>w</sub>*, characterized in terms of semantic uniqueness, i.e. when no further indications are necessary to single out the referent. Referentially it coincides with the most basic use of a personal pronoun, but in other respects it doesn't, as shown in (33), (36), and (37). This leads to the conclusion that *def<sub>w</sub>* underlies d-pronouns on their non-discriminating use, and that despite some overlap in discourse-referential nature, personal pronouns are of a distinct category. If this is correct, the division between weak and strong articles is directly mapped onto the pronominal domain within the class of d-pronouns. Personal pronouns must have a distinct source.

## 6 Summary

Definiteness split is a pervasive phenomenon, present in a variety of genetically and geographically unrelated languages. Despite significant variation in surface realization and contextual coverage, variation along both dimensions seems to be restricted and systematic. If these restrictions suggest an underlying shared core, the study of *def*-split is bound to shed new light on definiteness in general, across numerous aspects: the semantics and pragmatics of uniqueness, the synchronic and diachronic relationship between definiteness and demonstratives, processes of grammaticalization, multi-dimensionality in definiteness, and the relationship between articles and pronouns.

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