

Missing and not found: what adjectival agreement reveals about determinerless headlines in Dutch and German

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Abstract

This paper offers novel insights on articlelessness in noun phrases in Dutch and German headlines. Modified noun phrases that lack a determiner in headlines exhibit adjectival agreement that cannot be explained if one assumes an article that is phonologically null or that has been PF-deleted. We describe the pattern, consider different analytical options and eventually conclude that the interpretation, distribution as well as the observed adjectival agreement characteristic of articlelessness noun phrases calls for an account in which the article is never projected to begin with.

Keywords: headlines, ellipsis, non-projection, DP, adjective, agreement, article, Dutch, German

1. Introduction

As is the case for many other languages, the occurrence of articleless noun phrases is a characteristic feature of newspaper headlines in Dutch (De Lange 2008; Bennis 2015; Oosterhof and Rawoens 2017) and German (Sandig 1971; Reich 2017).¹ These noun phrases can have all kinds of interpretations, ranging over indefinite, definite and generic. This is illustrated for Dutch in (1):²

- (1) a. Fietser gewond na botsing met auto (INDEFINITE)
cyclist injured after collision with car
'A cyclist was injured after they collided with a car'
(Brabants Dagblad, 31.12.21)
- b. Gestoken fietser weer naar huis (DEFINITE)
stung cyclist back to home
'The cyclist who got stung is back home'
(Eindhovens Dagblad, 4.09.18)
- c. Gewone fietser is de klos (GENERIC)
normal cyclist is the dupe
'The average cyclist will be disadvantaged'
(IJmuiders Courant, 10.08.20)

¹ In this paper, we only discuss headlines, but the examples we deal with occur in other types of so-called abbreviated registers, such as digital apps, diaries, instruction manuals and recipes, as well.

² Unless otherwise indicated, the Dutch examples presented in this paper are attested headlines. In most cases, we accessed these headlines via the NexisUni® online database of Dutch newspaper articles, which we consulted using manually fed search terms. The headlines we present in this paper belong to the genre of *newsflashes*, the most concise of journalistic genres, whose aim is to inform the reader in no more than three paragraphs about one issue. The translation of the headlines provides a paraphrase of the intended reading, that we gathered from the lead section or the entire newspaper article. No attempt is made to translate the headlines into English headlines. For some examples we provide the articulated counterpart from the standard language, in some cases immediately following the example itself and preceded by ~.

One of the questions raised by these examples is how to analyse them in structural terms, in particular, whether or not they involve a DP. In this paper, we will contribute to this discussion by investigating articleless noun phrases that contain an adjective. Why this is useful can be made clear from the perspective of standard German and Dutch (in this paper, “standard” means “non-headline”).

To start with the former, the German nominal domain is characterised by a rich variety of flectional endings on attributive adjectives. The different forms are determined by Number, Gender and Case.³ We can distinguish three different paradigms,⁴ Paradigm 1, which we find in noun phrases with a definite determiner, as presented in Tables 1a and 1b, Paradigm 2, found in noun phrases with an indefinite determiner,⁵ in Table 2, and Paradigm 3 in so-called bare noun phrases, that is, noun phrases with no determiner at all, Tables 3a and 3b.⁶

Table 1a. Paradigm 1: Paradigm with adjective and definite article, singular (German)

	MASC			FEM			NEUT		
NOM	d-er	klein-e	Mann	d-ie	klein-e	Frau	d-as	klein-e	Kind
ACC	d-en	klein-en	Mann	d-ie	klein-e	Frau	d-as	klein-e	Kind
GEN	d-es	klein-en	Mann-es	d-er	klein-en	Frau	d-es	klein-en	Kind-es
DAT	d-em	klein-en	Mann	d-er	klein-en	Frau	d-em	klein-en	Kind

Table 1b. Paradigm 1: Paradigm with adjective and definite article, plural (German)

	MASC-FEM-NEUT		
NOM	d-ie	klein-en	Männer
ACC	d-ie	klein-en	Männer
GEN	d-er	klein-en	Männer
DAT	d-en	klein-en	Männer-n

Table 2. Paradigm 2: Paradigm with adjective and indefinite article (German)

	MASC			FEM			NEUT		
NOM	ein	klein-er	Mann	ein-e	klein-e	Frau	ein	klein-es	Kind
ACC	ein-en	klein-en	Mann	ein-e	klein-e	Frau	ein	klein-es	Kind
GEN	ein-es	klein-en	Mann-es	ein-er	klein-en	Frau	ein-es	klein-en	Kind-es
DAT	ein-em	klein-en	Mann	ein-er	klein-en	Frau	ein-em	klein-en	Kind

Table 3a. Paradigm 3: Paradigm with adjective and no article, singular (German)

	MASC		FEM		NEUT	
NOM	gut-er	Wein	gut-e	Sauce	kalt-es	Wasser
ACC	gut-en	Wein	gut-e	Sauce	kalt-es	Wasser
GEN	gut-en	Wein-es	gut-er	Sauce	kalt-en	Wasser-s
DAT	gut-em	Wein	gut-er	Sauce	kalt-em	Wasser

³ Whether definiteness plays a role as well has been subject to debate, for both German and Dutch; see Tseng (2009) and Leu (2015) for both languages; for a historical perspective, see Van de Velde en Weerman (2014); for a more general Germanic perspective see Kester (1996), Vangsnes (1999), Julien (2005), Schoorlemmer (2012) and Roehrs (2015), and see Pfaff (2017) on Icelandic.

⁴ When it comes to the endings on the adjective, traditionally, a distinction is made between “strong” paradigms (more morphologically different endings) and “weak” paradigms (fewer such endings). Because for this paper, it is important to distinguish the three systems in the tables 1-6 in the main text and to take the endings on the determiner into consideration as well (Section 3 below), the terms “strong” and “weak” are not sufficient. This is also the reason why we gloss inflectional endings simply as AGR in this paper.

⁵ More correctly, the indefinite article as well as other so-called “-*ein*”-words, such as the possessive pronouns (like *mein* ‘my’) and *kein* ‘no’. For a detailed description of German as well as Dutch, see Tseng (2009). For German, see Schlenker (1999) and Leu (2008), among others.

⁶ Glosses for tables 1-6: *klein* ‘small’, *Mann/man* ‘man’, *Frau/vrouw* ‘woman’, *Kind/kind* ‘child’, *gut/goed* ‘good’, *Wein/wijn* ‘wine’, *Sauce* ‘sauce’, *kalt/koud* ‘cold’, *Wasser/water* ‘water’.

Table 3b. Paradigm 3: Paradigm with adjective and no article, plural (German)

	MASC-FEM-NEUT	
NOM	klein-e	Männer
ACC	klein-e	Männer
GEN	klein-er	Männer
DAT	klein-en	Männer-n

The Dutch paradigm is much simpler, because the language has no case morphology and only two genders, ‘common’ and ‘neuter’. Descriptively, the situation is quite straightforward: the adjective always carries an *-e*, with two exceptions, namely, with indefinite neuter nouns and bare neuter nouns.⁷

Table 4a. Paradigm 1: Paradigm with adjective and definite article, singular (Dutch)

COMMON			NEUT		
d-e	klein-e	man	het	klein-e	kind

Table 4b. Paradigm 1: Paradigm with adjective and definite article, plural (Dutch)

COMMON-NEUT		
d-e	klein-e	mannen

Table 5. Paradigm 2: Paradigm with adjective and indefinite article (Dutch)

COMMON			NEUT		
een	klein-e	vrouw	een	klein-ø	kind

Table 6a. Paradigm 3: Paradigm with adjective and no article, singular (Dutch)

COMMON		NEUT	
goed-e	wijn	koud-ø	Water

Table 6b. Paradigm 3: Paradigm with adjective and no article, plural (Dutch)

COMMON-NEUT	
klein-e	mannen

The adjectives in articleless noun phrases in Dutch and German headlines display the endings belonging to Paradigm 3. However, whereas bare nouns in the standard varieties of these two languages can only have an indefinite and generic or kind referring interpretation, the articleless nouns in headlines can, in addition to these readings, also receive a definite interpretation; this was observed in Sandig (1971) for German. Viewed from a different perspective, we observe that in headlines German and Dutch, as a rule, adjectives show inflectional endings that are different from the endings we see in their standard, articulated counterparts (sometimes they are the same, but that is accidental).⁸ This is an important observation, because its consequence is that the articlelessness of headlines noun phrases in German and Dutch cannot be explained by simply assuming that the article is present but left unpronounced.

To illustrate, German newspapers feature headlines like (2a), but no headlines like (2b). In (2c), we present the version with the article added: note that the agreement ending is different

⁷ In certain special cases, the agreement ending *-e* is dropped on attributive adjectives even in the presence of an article, such as *het/een zelfstandig naamwoord* ‘the/a substantive noun’ and *de/een waarnemend burgemeester* ‘the/an acting mayor’. Such noun phrases lack inflection for reasons most likely having to do with non-compositional semantics; see Odijk 1992 for arguments and more data.

⁸ As is clear from the Tables 4-6, for Dutch, the effect is only observable with neuter nouns with a definite interpretation, as adjectives in common gender nouns feature the *-e* ending under all circumstances; but see fn. 7.

from the one in (2a). The non-occurrence of (2b), with the agreement ending of (2c), is not an accident: it is ungrammatical for the native speakers we consulted.

- (2) a. Brexit: Britisch-es Unterhaus stimmt Handelsabkommen mit der EU zu
 Brexit: British-AGR parliament.NEUT votes trade.agreement with the EU PRT
 ‘Brexit: The British House of Commons votes for a trade agreement with the EU’
 (Spiegel Online, 30.12.2020)
- b. *Brexit: Britisch-e Unterhaus stimmt Handelsabkommen mit der EU zu
 Brexit: British-AGR parliament.NEUT votes trade.agreement with the EU PRT
- c. Brexit: Das Britisch-e Unterhaus stimmt Handelsabkommen mit der EU zu
 Brexit: the British-AGR parliament.NEUT votes trade.agreement with the EU PRT

In Dutch, the situation is similar: in headlines, we generally do not get the flecional ending on the adjective modifying a neuter noun that we get in the standard articulated counterpart, (3a) vs. (3c). However, unlike what we just reported for German (speakers reject (2b)), not all Dutch speakers we consulted reject (3b), and this form is also attested in the media, as testified by (4). However, most speakers consulted do reject (3b) and articleless neuter noun phrases with the adjectival ending *-e* (as in (4)) occur less frequently than the ones with the ending *-ø* in (3a).

- (3) a. Turks-ø leger valt Syrië binnen
 Turkish-AGR army.NEUT falls Syria in
 ‘The Turkish army invades Syria’
 (BN/DeStem, 10.10.2019)
- b. %Turks-e leger valt Syrië binnen
 Turkish-AGR army.NEUT falls Syria in
- c. Het Turks-e leger valt Syrië binnen
 the Turkish army.NEUT falls Syria in
- (4) Turks-e leger vindt dertien lichamen in grot in Noord-Irak
 Turkish-AGR army.NEUT finds thirteen bodies in cave in Northern Iraq
 ~ Het Turks-e leger vindt dertien lichamen in een grot in Noord-Irak
 ‘The Turkish army has found thirteen bodies in a cave in Northern Iraq’
 (Parool, 28.12.2019)

The pattern we illustrated in (2) and (3) does not only occur with nationality adjectives, but also with adjectives of other types, as the following examples from Dutch demonstrate. The examples in (5) also show, that the phenomenon we investigate here is not only observed with noun phrases in subject position: they occur in other positions as well.

- (5) a. Vermist-ø aapje dood gevonden
 lost-AGR monkey.NEUT dead found
 ‘The lost monkey was found dead’
 (Noordhollands Dagblad, 22.06.2018)
- b. Prijsvraag voor nieuw-ø woongebied Baarschot
 contest for new-AGR residential.area.NEUT Baarschot
 ‘Contest for the new residential area in Baarschot’

- (Brabants Dagblad, 15.04.08)
- c. Tien jaar geëist voor fataal-ø schot bij softdrugsdeal
 ten year demanded for fatal-AGR shot.NEUT at soft.drugs.deal
 ‘Ten years demanded for the fatal shot at a soft drugs deal’
- (Leidsch Dagblad, 23.06.2021)
- d. Geen koper gevonden voor failliet-ø Conservatrix
 no buyer found for bankrupt-AGR Conservatrix.NEUT
 ‘No buyer has been found for the bankrupt company Conservatrix’
- (Trouw, 01.07.2021)
- e. Capelse Lucky Luke opent nieuw-ø stripmuseum in Noordwijk
 Capelle.ADJ Lucky Luke opens new-AGR cartoon.museum.NEUT in Noordwijk
 ‘Lucky Luke from Capelle opened the new cartoon museum in Noordwijk’
- (IJssel en Lekstreek Capelle, 23.06.2021)

The standard articulated version of the relevant noun phrases in (5) are given in (6).

- (6) a. het vermist-e aapje
 the lost-AGR monkey.NEUT
- b. ... voor het nieuw-e woongebied Baarschot
 for the new-AGR residential.area.NEUT Baarschot
- c. ... voor het fatal-e schot
 for the fatal-AGR shot.NEUT
- d. ... voor het failliet-e Conservatrix
 for the bankrupt-AGR Conservatrix.NEUT
- e. ... opent het nieuw-e stripmuseum
 ... opens the new-AGR cartoon.museum.NEUT

The data in (2) for German and (3a,b) and (5) for Dutch are quite robust. We take it that Dutch and German display the same regularity and represent the same phenomenon, in need of the same type of analysis.⁹ We return to the agreement pattern as attested in (4) in Dutch in section 2.1 below.

For German, the phenomenon that the adjective in the articleless variety has a different flecational ending than the standard articulated variety, can be illustrated using indefinite noun phrases as well. Here, in (7), are some headlines, with the articulated counterpart in (8).

- (7) a. England mit neu-em Ausfuhrrekord¹⁰ (Sandig 1971, 14 [1])
 England with new-AGR export.record.MASC
 ‘England with new record in exports’
- b. Mit klein-em Kind nach Übersee?
 with small-AGR child.NEUT to overseas
 ‘Travel overseas with a small child?’
- (www.eltern.de; accessed 21.01.22)

⁹ This is in line with Joe Emonds’ conclusion, that “the Dutch and German systems for adjectival modification are formally very similar” (Emonds 2012, 180).

¹⁰ For a comment on some exceptional behavior of the dative masculine, see Section 3 below.

- c. Verunglückter Siebert in schwer-er Krise (Sandig 171, 65 [20])
 crashed Siebert in heavy-AGR crisis.FEM
 ‘Siebert in serious crisis after accident’
- (8) a. England mit einem neu-en Ausfuhrrekord
 England with a new-AGR export.record.MASC
- b. Mit einem klein-en Kind nach Übersee?
 with a small-AGR child.NEUT to overseas
- c. Verunglückter Siebert in einer schwer-en Krise
 crashed Siebert in a heavy-AGR crisis.FEM

In some cases, such as (9), the ending is the same, but that is due to an accidental overlap in the different paradigms, in this case between Paradigm 2 and Paradigm 3. This will be discussed in more detail in section 3 below.

- (9) a. Dreizehnjährig-es Mädchen singt mit...! (Roehrs 2015)
 thirteen.year.old-AGR girl.NEUT sings along
 ‘A 13-year-old girl sings along.’
- b. Ein dreizehnjährig-es Mädchen singt mit...!
 a thirteen.year.old-AGR girl.NEUT sings along

The point of these examples is, first, that adjectives in articleless noun phrases in headlines invariably carry the flectional endings of Paradigm 3 and, second, that articlesless nouns with these adjectives can be interpreted in different ways. *Britisch-es Unterhaus* in (2), with ending -es is definite: ‘the British House of Commons’ and *Dreizehnjährig-es Mädchen* in (9), with the same -es, is indefinite: ‘a thirteen-year-old girl’. In other words, the flectional morphology on the attributive adjective is irrelevant with respect to the referential properties of the noun phrase as a whole.

In this paper we address two issues. The first is the multi-interpretability of articleless noun phrases in headlines: How can we explain the fact that they can be interpreted as definite, indefinite and generic? The second issue concerns the flectional morphology: How can we explain the form of the flectional endings found on the adjectives in articleless noun phrases? As to the first issue, taking all analytical options and earlier proposals into account, we will argue that articleless noun phrases are just that: simple NPs (or NumPs) without a determiner layer (Section 2). With respect to the morphology, we will argue that, analysed properly, the agreement facts presented in this section follow immediately once we acknowledge that articleless NPs do not involve a DP layer (Section 3). Some consequences will be discussed in section 4.

2. The representation of articleless nouns in Dutch and German headlines

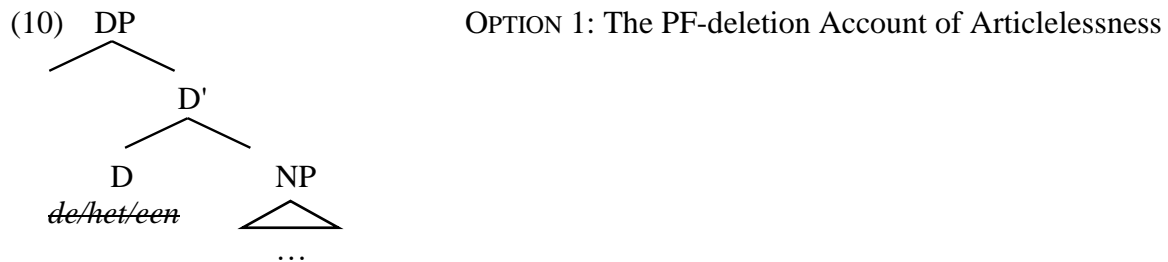
In this section we investigate the structure of articleless noun phrases in Dutch headlines with special attention to their syntactic distribution and their interpretation on the basis of attested examples from newspapers. We present a case-study of Dutch headlines mentioning German only sporadically; we could have added a German example to each Dutch one, but for reasons of space we have not done that.

It is clear from the start that headlines feature articleless NPs that do not occur in standard Dutch.¹¹ Standard Dutch allows for argumental articleless NPs with mass nouns and bare plurals as well as a few idiomatic expressions and collocations such as V+N combinations like *piano spelen* /piano play/ ‘play the piano’, P+N combinations like *op kantoor* /on office/ ‘in the office’ and coordinations like *man en vrouw* ‘husband and wife’ (Broekhuis and Den Dikken 2012: 720-723). Our data do not belong to any of these types, as they encompass noun phrases in combination with any syntactic category and with an interpretation that we will show is not restricted to any particular type, but rather ranges over all the interpretations that articulated noun phrases in standard Dutch can have (viz., entity or property denoting, definite, indefinite, specific and non-specific, kind and generic reading). This brings up the question what the structure of articleless NPs is and how the various interpretations come about.

To answer these questions, we will review the syntactic distribution and interpretation of articleless NPs, organizing the discussion around the currently available options for a structural analysis, as proposed in the scarcely available formal literature on the representation of articleless nouns in headlines (Stowell 1991; Weir 2009, 2013, 2017; Reich 2017), but also taking into account other work on articleless NPs. We believe there are three a priori possible analytical options to explain the absence of articles in headlines: (i) surface deletion of the article, (ii) insertion of a dedicated null article and (iii) non-projection of the DP layer. We discuss these options in turn, reject the first two, and settle for the third.

2.1. Analytical option 1: PF-deletion

The first option for the representation of articleless noun phrases is surface deletion of the article. According to this option, the structure and the grammatical elements in an articleless noun phrase are the same as in noun phrases with overt articles, with the only difference that in an articleless noun phrase the determiner is not pronounced. We define surface deletion as non-realisation at PF (“PF-deletion” in short). We mark this by strike-through as in (10).



As far as we know, no work on articlelessness has specifically argued for (or against) this type of deletion, but Stowell (1991), the first work in the generative tradition on articleless noun phrases in what he calls “Abbreviated English” (comprising headlines, diaries and instruction manuals), is compatible with it. Stowell assumes that headlines may contain null functional heads corresponding to the determiners in certain positions, which can be definite as in (11a) or indefinite as in (11b).

- (11) a. Pope will visit Kremlin in 1991. (Stowell 1991 [1c])
 ‘The Pope will visit the Kremlin in 1991’

¹¹ Non-standard regional and sociolectal varieties of Dutch also feature articleless noun phrases; see Oosterhof (2008a,b) and Doreleijers et al (2019). The articleless noun phrases in headlines are clearly not related to such varieties as they can be found in news outlets with national coverage (like *NRC*, *Het Parool*, *Trouw* and the NOS), targeting speakers of standard Dutch.

- b. L.A. man finds rare gold coin.
 ‘An L.A. man finds a rare gold coin.’

(Stowell 1991 [1d])

The PF-deletion account of articlelessness predicts that the interpretation of articleless noun phrases should be exactly the same as the interpretation of their articulated equivalent, that is, depending on the type of determiner deleted, definite, specific indefinite, non-specific indefinite and generic interpretations should all be available for articleless noun phrases.

While this type of interpretational freedom is, as we have noted, indeed attested in articleless noun phrases in Germanic (see 2.2 for more data), PF deletion cannot be the right account for the data in (2a) and (3a). Surface deletion of the article in these examples would entail that the noun phrase contains the full syntactic realisation (i.e., the presence of a feature bundle) of the article, and as a consequence, the expectation is that it makes no difference for the ending on the attributive adjective whether the article is overt or has been PF-deleted. This is indeed what we saw in (4), repeated here.

- (4) Turks-e leger vindt dertien lichamen in grot in Noord-Irak
 Turkish-AGR army.NEUT finds thirteen bodies in cave in Northern Iraq
 ~ Het Turks-e leger vindt dertien lichamen in grot in Noord-Irak
 ‘The Turkish army has found thirteen bodies in a cave in Northern Iraq’

We believe that the speakers who accept (4) and the newswriters that write Dutch headlines like this one do indeed allow for PF-deletion of articles. The inflection on the adjective is without any doubt compatible with this analysis, and so is the fact that the phrase *Turkse leger* has a definite interpretation: it unambiguously designates the national armed forces of Turkey. We also hypothesise that PF-deletion in examples like (4) is facilitated by the initial position of the deleted article (as native speakers report that non-initial position degrades the acceptability) and is likely similar to the elliptical phenomenon called left-edge deletion for this reason (see Napoli 1982 and Weir 2012 on the latter).

However, facts like (2a) and (3a), or the ones in (5), which are more common than (4), cannot be accounted for if we assume PF-deletion of the definite article, since, as we have seen (some cases repeated in (12)), this results in the wrong inflection on the adjective:

- (12) a. Brexit: ~~Das~~ Britisch{* -es/-e} Unterhaus stimmt Handelsabkommen mit der EU zu
 Brexit: the British-AGR parliament.NEUT votes trade.agreement with the EU PRT
 (cf. (2))
 b. ~~Het~~ Turks{* -ø/-e} leger valt Syrië binnen
 the Turkish-AGR army.NEUT falls Syria in
 (cf. (3))
 c. ~~het~~ vermist{* -ø/-e} aapje
 the lost-AGR monkey.NEUT
 (cf. (5a)/(6a))

For this reason, PF-deletion cannot be the explanation of our puzzling set of data. This set of data must have an underlying representation where the absence of the definite article goes deeper than only affecting the phonetic realisation of it. For the sake of completeness, we note that the Dutch (3a), which features a null adjectival ending, cannot be accounted for by assuming two instances of PF-deletion: deletion of the article and deletion of the inflectional ending on the adjective. The problem with this account is that adjectives modifying common gender nouns never appear without the *-e* ending in headlines, as illustrated in (13). In this light, it is not clear why neuter nouns and common gender nouns should behave differently.

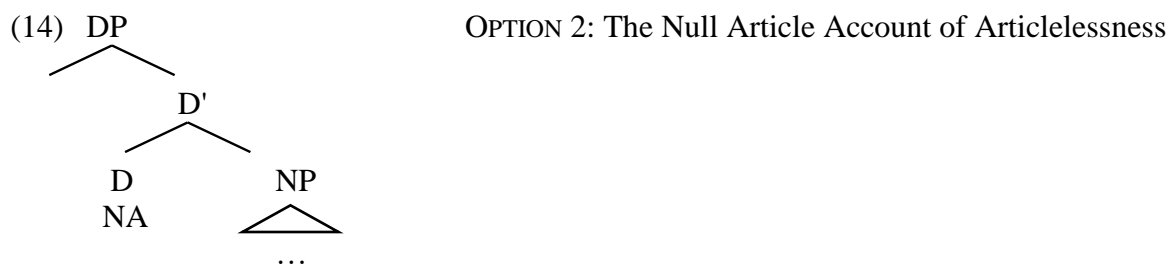
- (13) a. Nederlands(*-e) regering praat over geld voor KLM
Dutch-AGR government.CMN talks about money for KLM
'The Dutch government is talking about financial support for KLM'
(Friesch Dagblad, 6.04.2021)
- b. Geldrop: Kavel vrij voor nieuw(*-e) burgemeester
Geldrop: plot available for new-ARG mayor.CMN
'Plot of land available for the new mayor'
(Eindhovens Dagblad 18.01.2003)

We conclude that the nullness of the inflection on the adjective in (3a) is not due to deletion of the inflection but rather represents the null-form of the adjectival agreement. The German data (such as (2)) show this more clearly: we are dealing with an agreement ending on the adjective, it is just not the same one as the one we get when there is an overt article.

In conclusion, the PF-deletion approach cannot be the right approach as it cannot explain the agreement endings we see on the attributive adjective in German and Dutch headlines. In fact, the existence of the two patterns in Dutch illustrated in (4) and (12) already clearly shows that the idea that PF-deletion is an operation that applies wholesale to all types of articleless headlines cannot be correct. As shown above, *Turks-e leger* ‘Turkish armed forces’ in (4) is most likely the result of PF-deletion of the article. But if this is correct, then *Turks-ø leger* in (12b) cannot be the result of PF-deletion of the article, because it is not easy to explain how PF-deletion of the article will lead to two different forms of the adjective.

2.2. Analytical option 2: Null Article insertion

The second analytical option we entertain for articlelessness in Dutch and German headlines is the insertion of a dedicated null article in the determiner position. According to this option, the structure of an articleless noun phrase is the same as that of a noun phrase with an overt article, but the lexical properties of the articles are different. Articleless noun phrases contain a specific lexical item (like the “NA” “null article” in Reich 2017). This article, just like any lexical item, has a particular set of formal and semantic features, and, in addition, a phonological feature, the latter encoding that it has no phonological realisation, i.e., it is phonologically null.



Since this analysis has been proposed for NPs in headlines in recent works (Weir 2013, 2017; Reich 2017), we discuss this option below by engaging with the specific claims of these works.

Weir (2013, 2017) proposes a null article in headline NPs with special reference to articlelessness in English headlines. The theoretical focus of interest in Weir's papers is on the interpretational differences between indefinite noun phrases with a determiner and their articleless counterpart in headlines. Weir argues that the latter is different from ordinary indefinites in that it must have a referential interpretation and cannot have a generic or non-

referential one. A null determiner of English – \emptyset_D in Weir’s notation – can only have a specific reading, comparable to the meaning of *a certain/particular* noun phrase.¹²

- (15) a. A comet is made of ice and rock. (generic reading: any comet)
 b. \emptyset_D Comet is made of ice and rock. (only specific comet)
 (Weir 2017, 169, ex. 42)

The specific interpretation of the null determiner is also clear from the fact that articleless noun phrases have wide scope with respect to adverbs of quantification; it is difficult to interpret them with narrow scope (Weir 2017, 169 [43]):

- (16) a. A student is usually late for my class.
 (✓usually > a student; ✓a student > usually)
 b. \emptyset_D student is usually late for my class.
 (*usually > a student; ✓ a student > usually)

For these reasons, Weir (2013, 2017) proposes that the null determiner is not the equivalent of an overt article such as *a(n)*, but that it corresponds to a lexical item that standard English does not have. This headline-specific null determiner introduces a choice function variable (Weir 2017, 171 [49]), the value of which is either provided by the context or it is closed existentially at the highest level:

- (17) a. $[[\emptyset_D]] = f_{\langle \text{et}, e \rangle}$
 b. $[[\text{dog}]] = \lambda x. x \text{ is a dog}$
 c. $[[\emptyset_D]]([[\text{dog}]]) = f(\lambda x. x \text{ is a dog}) = \text{some entity in the extension of } \textit{dog}$

The null determiner, identified as a choice function, underlies both indefinite and definite noun phrases, in other words, it is vague when it comes to definiteness: it introduces definite or specific indefinite noun phrases.

The core of this proposal is similar to the analysis of German headlines null determiners in Reich (2017). Reich assumes specifically for the case of German noun phrases in headlines that the NA in them is flexible to accommodate all types of interpretations, definite and indefinite. Reich (2017) differs from Weir (2017) in stating that indefinite articleless noun phrases can have both a specific and a non-specific interpretation. In the case of indefinites, the choice function picks an element in its restrictor; in case of definites, the choice function applies to a singleton set. For all interpretations, Reich proposes that the null determiner represents a parametrised choice function, parametrised, that is, to the topical event. The choice function is existentially bound at the level of the TP or the VP,¹³ and it introduces an event variable *e* which is bound (and thus licensed) by the event topic, as shown in (18). In this account, overt determiners also correspond to choice functions, but they are not parametrised in this way.

¹² The only exceptions from this generalisation are null determiners with a non-specific interpretation associated with objects of opaque (intensional) verbs, which are taken to be predicative in approaches like Zimmermann (1993), such as: *Teachers call for \emptyset_D strike* (Weir 2017, fn 7, i) and *Newspaper looks for \emptyset_D local hero* (Weir 2017, fn 7, ii).

¹³ The choice function is existentially bound at the VP level when a *de dicto* indefinite is in the domain of opaque predicates as in (i).

(i) NA Polizei sucht NA Zeugen (Reich 2017, ex. 28)
 police look.for.3SG witness.SG

Reich assumes that *Zeugen* ‘witness’ is existentially quantified within the scope of the verb phrase. Note that Weir (2017) excludes these examples from his treatment as containing an NA (as we mentioned in fn. 12), with reference to another approach to such indefinites that treats them as predicates.

- (18) a. Kuh springt durch Fenster in Küche
 cow jumps through window into kitchen
 ‘A cow jumps through a window into the kitchen’
 (Süddeutsche 22.06.12, Reich 2017, ex. 2)
- b. (Eine) Kuh springt durch (ein) Fenster in (die) Küche (Reich 2017, ex. 20)
- c. $[\text{TopP } e_{\text{Top},i} \text{ } [[\text{NA}_{f,i} \text{ Kuh }] \text{ springt durch } [[\text{NA}_{g,i} \text{ Fenster }] \dots]]]$ (Reich 2017, ex. 26a)

When it comes to the syntax of the null determiner, Weir (2017) proposes that the null determiner is of the same syntactic type as cardinality or quantificational expressions like *all (of)*, *half (of)*, *some (of)*, *many (of)*, *five (of)*, which are determiners that can also have a choice-functional use.

Having introduced null articles in the Weir-Reich type of analysis, we now turn to the question whether this analysis is applicable to articleless noun phrases in Dutch (and German) headlines. For a start, we remark that null articles as described above – with a unique interpretation of a choice function and the syntax of a cardinality or quantificational expression – can be argued to underlie headlines where a noun phrase has the interpretation of *a certain/some particular entity*, such as the examples in (19).

- (19) a. Groot onderzoek na tweede prik na Janssen
 big investigation after second jab after Janssen
 ~ Een groot onderzoek na de tweede prik na Janssen
 ‘There is a specific big investigation coming about a second vaccination after (vaccination with) the Janssen vaccine’
 (Leidsch Dagblad, 22.06.21)
- b. Dood varken in tuin moslimgezin
 dead pig in garden Islamic.family
 ~ Een dood varken in de tuin van een moslimgezin
 ‘A dead pig was found in the garden of an Islamic family’
 (De Twentsche Courant, 5.01.05)
- c. Zeehondje drinkt melk bij dood schaap
 seal.DIM drinks milk with dead sheep
 ~ Een zeehondje drinkt melk bij een dood schaap
 ‘A baby seal sucks milk from a dead sheep.’
 (Dagblad van het Noorden, 11.11.19)

The choice function analysis can also be extended to noun phrases with definite (and thus specific) reference, such as our initial examples above in (2a), (3a) and (5) and the ones in (20), where the choice function vacuously applies to a singleton set and picks the single element in this set.¹⁴

¹⁴ While ordinary definites can be accounted for, it is less clear how the choice function analysis can deal with expletive determiners that lack any kind of referential meaning, such as (*reizen*) *met de trein*, (*gaan*) *met de auto*, which specify ways of transportation and do not refer to any specific train or car. (NS is the Dutch Railway company.)

- (i) NS: Reis met trein vantevoren aanmelden
 NS: trip with train in.advance register.INF
 ~ NS: een reis met de trein van tevoren aanmelden
 ‘NS: a trip by train should be registered in advance’

(De Twentsche Courant, 11.11.20)

- (ii) Ruim helft gaat met auto naar het werk, het liefst alleen
 more.than half goes with car to the work preferably alone

- (20) a. Woningtekort krimpt, maar niet voor lang
house.shortage shrinks but not for long
~ Het woningtekort krimpt, maar niet voor lang
'The shortage of houses is shrinking, but not for a long time.'
(De Volkskrant, 8.10.19)
- b. Exitpoll verkiezingen: VVD wint weer dik, mogelijk vier nieuwe partijen
Exitpoll elections: VVD wins again thick possibly four new parties
~ De/een exitpoll van de verkiezingen: de VVD wint weer dik, mogelijk vier nieuwe partijen
'Exitpoll of the elections: the VVD [a political party] wins by a large margin, there will possibly be four new parties [in parliament].'
(Metronieuws.nl, 18.03.21)
- c. Kamerdebat over vuurwerk wordt eigenaardig feestje
parliament.debate about fireworks becomes peculiar party
~ Het kamerdebat over vuurwerk wordt een eigenaardig feestje
'The parliamentary debate about fireworks becomes a peculiar party'
(De Volkskrant, 19.10.19)

That the NPs in these examples are referential can be shown by the fact that they have discourse referential properties. As the following headlines show, they can serve as the antecedent of personal pronouns and anaphors as well, which shows that they support discourse anaphora.

- (21) a. Fietser (20) krijgt in Dordrecht vuurwapen tegen zijn hoofd
cyclist (20) gets in Dordrecht weapon against his head
en moet horloge afstaan
and must watch hand.over
'A cyclist (age 20) gets a gun pointed at his head in Dordrecht and has to hand over his watch'
(BN De Stem.nl, 12.12.20)
- b. Turks-ø leger consolideert zijn posities in Noord-Irak
Turkish-AGR army.CMN consolidates its position in North Irak
'The Turkish army consolidates its position in North Irak'
(De Volkskrant, 18.06.97)
- c. Nieuw-e burgemeester Waalwijk verrast haar omgeving en zichzelf
new-AGR mayor.CMN Waalwijk surprises her environment and herself
'The new mayor of Waalwijk surprises her environment and herself'
(Brabants Dagblad, 20.05.21)
- d. Oudst-e inwoner Haarlemmermeer verrast op haar 105de verjaardag
oldest-AGR inhabitant.CMN Haarlemmermeer surprised on her 105th birthday
'The oldest inhabitant of Haarlemmermeer received a surprise on her 105th birthday'
(Haarlems Dagblad, 20.07.22)

What is more, the referential definite and specific indefinite interpretations are not the only interpretations articleless noun phrases can have in Dutch and German headlines. In the rest of this section, we list the available interpretations, starting with the ones that cannot be explained

~ Ruim helft gaat met de auto naar het werk, het liefst alleen
'More than half (of the people) goes to work by car, preferably alone.'

by postulating a choice function in the position of the determiner, viz., property denoting noun phrases.

Just as in English, we come across examples that contain an articleless noun phrase in the scope of opaque predicates like *willen* ‘want’, similar to those listed in fn. 12:

- (22) a. Roermond wil plan voor snelle woningbouw
 Roermond wants plan for quick house.building
 ~ Roermond wil een plan voor snelle woningbouw
 ‘The city of Roermond wants to have a plan for quick building of houses’
 (Dagblad de Limburger, 23.11.21)
- b. Directeur wil nieuwe dialoog met milieubeweging
 director wants new dialogue with environmental.movement
 ~ Directeur wil een nieuwe dialoog met de milieubeweging
 ‘The director wants to have a new dialogue with the environmental movement.’
 (De Volkskrant, 10.9.1998)
- c. D66 wil meldpunt onveilige plekken
 D66 wants hotline unsafe places
 ~ D66 wil een meldpunt voor onveilige plekken
 ‘D66 [a political party] wants to have a hotline of unsafe places’
 (Haagsche Courant, 25.11.21)

All these examples are interpreted with the narrow scope reading for the indefinite. The wide scope (existential) interpretation (for (22c), ‘There is a hotline of unsafe places that D66 wants to have’) is unavailable in all these examples. If indefinites in the scope of opaque predicates should be treated as predicative noun phrases (Zimmermann 1993; see fn. 12 above), these data are problematic for the choice function analysis.

Even more problematic are articleless noun phrases that are predicative in nature in all semantic accounts, namely non-referential articleless noun phrases that form part of the lexical predicate. They pose a problem for the choice function analysis because they are not entity denoting, but have the denotation in the domain of an expression of type $\langle e, t \rangle$ (de Swart *et al.* 2006 among others). To illustrate this type of noun phrase, consider the data in (23), featuring the nominal predicates *slecht idee* ‘bad idea’ (23a), *lastige klus* ‘difficult job’ (23b) and *alternatief* ‘alternative’ (23c). The same type of predicative noun phrase can be found in (20c) above (cf. *eigenaardig feestje* ‘peculiar party’).

- (23) a. Verplicht verduurzamen slecht idee
 obligatory make.sustainable.INF bad idea
 ~ Verplicht verduurzamen is een slecht idee
 ‘To make making things sustainable obligatory is a bad idea’
 (Friesch Dagblad 13.07.2021)
- b. De juiste oplossing vinden blijkt lastige klus
 the right solution find.INF turns.out difficult task
 ~ De juiste oplossing vinden blijkt een lastige klus
 ‘Finding the right solution turns out to be a difficult job’
 (Veluws Dagblad, 26.02.2009)
- c. CU: massaal testen alternatief voor 2G
 CU: massive testing alternative for 2G
 ~ CU: massaal testen is een alternatief voor 2G
 ‘ChristenUnie [a political party]: large-scale testing is an alternative to 2G policies’
 (Dagblad van het Noorden 16.11.21)

As these noun phrases are preceded by the indefinite article *een* in standard Dutch, we must assume a corresponding null article in these examples.¹⁵ At the same time, these noun phrases do not introduce referents into the discourse, which means that the missing determiner cannot correspond to a choice function in them. This is clearly a problem under the traditional definition of choice functions in which they apply to a (non-empty) set and return a member of that set (Reinhart 1997; Winter 1997): there is no member of any set being singled out here, as the noun phrases are not entity-denoting.¹⁶ If there is a null article in these examples, this null article cannot have the semantic import of a choice function.

- (24) a. Wolf moet ons tot nadenken aanzetten
 wolf must us to think push
 ~ De wolf moet ons tot nadenken aanzetten
 ‘The wolf must make us think’
 (Dagblad van het Noorden, 4.11.2022)
- b. Dood schaap bewijst: wolf bereikt Flevoland
 dead sheep proves: wolf reaches Flevoland
 ~ Een dood schaap bewijst: de wolf bereikt Flevoland
 ‘A dead sheep proves: the wolf has reached Flevoland’
 (De Stentor, 9.2021.2018)

¹⁵ Standard Dutch only allows singular bare NPs in predicate position with so-called capacity nominals (de Swart et al 2006): *Jan is leraar* ‘Jan is a teacher’. The examples in (22) on the other hand contain ordinary nouns, which can only be used with a determiner. Another indication that *idee* ‘idea’ and *klus* ‘task’ are not articleless capacity nominals is that they have adjectival modifiers, and capacity nominals reject modification of this sort: **Jan is goede leraar* (intended) ‘Jan is a good teacher’.

- (25) a. Utrechter kan vaak niet gelijkwaardig ‘meepraten’
 Utrecht.ER can often not equivalently participate
 ‘Residents of Utrecht can often not participate in discussions on equivalent terms’
 (✓often > an Utrechter; *an Utrechter > often)
 (AD/Utrechts Nieuwsblad, 17.7.21)
- b. Vrouw bij gemeenten meestal voor dicht ‘loket’
 woman at municipalities usually before closed window
 ‘Women usually find themselves in front of a closed window in city halls’
 (✓mostly > a woman; *a woman > mostly)
 (De Twentsche Courant, 12.6.21)
- c. Jong-ø vogeltje alleen in de tuin is meestal niet zielig
 young.AGR bird.NEUT alone in the garden is usually not pathetic
 ‘A young bird alone in the garden is usually not pathetic.’
 (✓mostly > a young bird (~most young birds); *a young bird > mostly)
 (AD/Groene Hart, 21.6.21)

The standard counterpart of these sentences feature the indefinite article, as shown in (26). In (25) and (26), the nouns in question (like *Utrechter* ‘resident of Utrecht’ and *vrouw* ‘woman’) do not have kind reference (there are no taxonomic kinds of this sort). The overt and null article here express a “generic generalisation”, as defined in Farkas and de Swart (2009).

- (26) a. Een Utrechter kan vaak niet gelijkwaardig ‘meepraten’
 an Utrecht.ER can often not equivalently participate
 ‘A resident of Utrecht can often not participate in discussions on equivalent terms’
- b. Een vrouw bij gemeenten meestal voor dicht ‘loket’
 a woman at municipalities usually before closed window
 ‘A woman usually finds herself in front of a closed window in city halls’

It is important to point out that the examples in (25) cannot be analysed involving plural noun phrases underlyingly, as these noun phrases only allow singular, but not plural agreement on the finite verb, unlike generically interpreted bare plurals that trigger plural agreement in (27):

- (27) a. Utrecht-er-s { *kan / kunnen } vaak niet gelijkwaardig ‘meepraten’
 Utrecht-ER-PL can.3SG can.3PL often not equivalently discuss
 ‘Residents of Utrecht can often not participate in discussions on equivalent terms’
- b. Jonge vogeltje-s alleen in de tuin { *is / zijn } meestal niet zielig
 young bird.NEUT-PL alone in the garden is / are usually not pathetic
 ‘Young birds alone in the garden are usually not pathetic.’

If the subject noun phrases in (25) should receive an analysis in terms of the presence of a null article, we need to assume two types of referential indefinite null articles: one for a referential, specific interpretation with high scope indefinites (cf. (19)) and another one for generic, low scope indefinites (as in (25)). Note that the low scope interpretation for an indefinite is not only possible with generic noun phrases, as it can also occur with non-specific noun phrases that scope below universal quantifiers, as in (28):

- (28) a. Ieder mens heeft blueprint in geboortehoroscoop
 every person has blueprint in birth.horoscope
 ~ Ieder mens heeft een blueprint in haar/zijn geboortehoroscoop
 ‘Every person has a blueprint in their birth horoscope.’

(De Twentsche Courant, 15.11.21)

- b. Pakje voor ieder kind
present for every child
~ Een pakje voor ieder kind
'A present for every child.'

(De Nieuwsbode Groot-Zeist, 11.11.20)

To summarise the discussion so far, the examples of this section illustrate that articleless noun phrases in Dutch headlines can have the following properties:

- (29) i. they can have specific, high scope reading (standard counterpart has indefinite *een* 'a') (cf. (19))
ii. they can have a *de dicto* reading in the scope of *want*-type verbs (standard counterpart has indefinite *een* 'a') (cf. (22))
iii. they can be scopally non-specific (low scope) noun phrases (standard counterpart has indefinite *een* 'a') (cf. (28))
iv. they can be predicative noun phrases (standard counterpart has indefinite *een* 'a') (cf. (23))
v. they can be definite (specific) noun phrases, including proper names (standard counterpart has definite *de/het* 'the') (cf. (20))
vi. they can be kind referring (standard counterpart has *de/het* 'the') (cf. (24))
vii. they can be indefinite generic singular noun phrases (standard counterpart has indefinite *een* 'a') (cf. (25))

Returning to the question whether all these types of determiners should be analysed in terms of a lexically specified NA representing a choice function, our answer is negative. The choice function analysis, as proposed by Weir (2017), was designed to capture the properties of indefinites of the type in (29i) (and by extension, definites of the type in (29v)) that appear with highest scope in the clause. While technically, choice functions can also be introduced at lower levels to yield narrower scope (Winter 1997, Kratzer 1998), which would make this approach in principle extendable to the cases of (29ii) (as does Reich 2017), the choice function account cannot be extended to predicative noun phrases (29iv) by any means. We are not aware of approaches of this type to kind denoting definites (29vi), either.

As a result of these considerations, we believe the variety of readings attested in Dutch articleless noun phrases is better served by an account that does not posit a single underlying null lexical item in the structure of articleless nominal constituents in headlines. Since assuming various distinct types of NAs instead would go against the very idea of defining the null article as a single lexical element with a specific meaning, we propose that assuming a number of distinct NAs is not the ideal analytical choice.

The syntactic distribution of articleless noun phrases in Dutch headlines supports this conclusion, too. If there was a null article of some sort in the determiner position in NPs in headlines, we expect such a determiner to be in need of syntactic licensing characteristic of empty elements in general. It is known that determinerless noun phrases such as mass nouns and bare plurals are syntactically restricted in many languages, such as Italian and Spanish: they can be objects of transitive verbs or complements of prepositions (Contreras 1986; Longobardi 1994; Zamparelli 1995), but they cannot occur as subjects of transitive verbs. As the reader can ascertain looking at our examples, such restrictions do not apply to articleless noun phrases in Dutch headlines. In addition to occurring in lexically governed positions as objects of transitive verbs (e.g. (5e)) or complements of prepositions (e.g. (5b,c,d), (13b), (19c)), they can crucially also occur in ungoverned positions, as subjects of transitive and unergative verbs. The following

examples, repeated from above, demonstrate the latter possibility for both definite and indefinite interpretations.

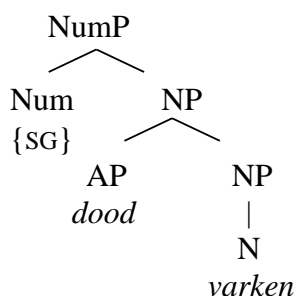
- (3) a. Turks- \emptyset leger valt Syrië binnen
 Turkish-AGR army.NEUT falls Syria in
 ‘The Turkish army invades Syria’
- (13) a. Nederlands-e regering praat over geld voor KLM
 Dutch-AGR government.CMN talks about money for KLM
 ‘The Dutch government is talking about financial support for KLM’
- (18) a. Kuh springt durch Fenster in Küche
 cow jumps through window into kitchen
 ‘A cow jumps through a window into the kitchen’
- (19) c. Zeehondje drinkt melk bij dood schaap
 seal.DIM drinks milk with dead sheep
 ‘A baby seal sucks milk from a dead sheep’

The free syntactic distribution of articleless noun phrases in headlines is fully in line with the proposal that they do not contain a null article of any sort and are thus not in need of syntactic licensing. In Section 3, we will see further that not postulating a null article is consistent with the adjectival agreement patterns displayed in articleless noun phrases.

2.3. Analytical option 3: DP-less noun phrases

The third analytical option for articleless noun phrases is that they lack a DP layer, meaning that they do not contain an article at all. According to this option, articleless noun phrases only have as much structure as we have evidence for (“what you see is what you get”): there is no DP layer, and nominals correspond to nothing bigger than NumP (or whatever representation one wants to adopt for the singular/plural distinction). A singular noun phrase like *dood varken* ‘dead pig’ corresponds to (30) and a plural one like *verkiezingen* ‘elections’ in (20b) corresponds to (31).

- (30) OPTION 3: The No DP Account of Articlelessness



(cf. *dood varken* in (19b))

- (31)
-
- ```

 graph TD
 NumP --> Num["Num
{PL}"]
 NumP --> NP1[NP]
 NP1 --> N["N
verkiezingen"]

```

(cf. *verkiezingen* in (20b))

In this approach, aspects of interpretation that, in the standard language, are partly signaled by the presence of a particular determiner in the D position, are not derived by the addition of syntactic structure or lexical elements on top of the structures in (30)-(31), but are due to abstract semantic operations. Such operations can be envisaged as type shifting operations that can be applied to the denotation of a noun to make it a suitable filler of an argument position. Such type shifting operations are known to be possible in human language in the model of Partee (1987) or in that of Chierchia (1998), and have been used to explain articlelessness of definite and indefinite nominals specifically by Geist (2010) and Jenks (2018), among others.

In Partee's proposal, the gist of which we adopt for illustrative purposes, noun phrases are ambiguous between an entity reading (type  $\langle e \rangle$ ), a predicative reading (type  $\langle e, t \rangle$ ) and a quantificational reading (type  $\langle \langle e, t \rangle, t \rangle$ ) and type shifting is due to a covert application of a small number of semantic operators, such as IOTA and EX, *shift* and *lower*. Following Chierchia (1998), we adopt the  $^{\cap}$  and the  $^{\cup}$  operators, which turn a property into a kind and a kind into a property, respectively.

Assuming that in headlines, a nominal is generated property-denoting (see Chierchia 1998 for an alternative view), this means that property denotations (29iv) are available for noun phrases without any further operation, and other interpretations are derived by semantic operators, such as the above mentioned  $^{\cap}$  operator, that turns a property into a kind. In addition, we find shifted denotations of various types in argument positions: a property can shift to an entity (IOTA shift), yielding the single unique element that satisfies the property, or it can shift to an existential quantifier (EX shift) and thus represent a definite or an indefinite nominal respectively. *Kamerdebat* 'parliamentary debate' in (20c), repeated from above, can receive an analysis in terms of an IOTA shift: the property PARLIAMENTARY DEBATE shifts to  $\iota x$  PARLIAMENTARY DEBATE(X), which is the single parliamentary debate in the discourse context:

- (20) c. 

|                   |       |           |         |             |         |
|-------------------|-------|-----------|---------|-------------|---------|
| Kamerdebat        | over  | vuurwerk  | wordt   | eigenaardig | feestje |
| parliament.debate | about | fireworks | becomes | peculiar    | party   |

  
~ Het kamerdebat over vuurwerk wordt een eigenaardig feestje  
'The parliamentary debate about fireworks becomes a peculiar party'

*Zeehondje* 'baby seal' in (19c), also repeated from above, can receive an analysis in terms of EX shift: the property SEAL shifts to  $\lambda P \exists y [\text{SEAL}(y) \wedge P(y)]$  and yields an indefinite meaning with specific reference.

- (19) c. 

|           |        |      |      |      |        |
|-----------|--------|------|------|------|--------|
| Zeehondje | drinkt | melk | bij  | dood | schaap |
| seal.DIM  | drinks | milk | with | dead | sheep  |

  
~ Een zeehondje drinkt melk bij een dood schaap  
'A baby seal sucks milk from a dead sheep'

Since the covert operation EX shift is expected to yield both wide and narrow scope interpretations in general (see Dayal 2004), a welcome consequence of the type-shift analysis proposed here is that we can explain why headlines has articleless indefinites with variable scope: they can exhibit a narrow scope reading (29iii), but also a wide scope one (29i). In this respect, headlines in Dutch and German differ from articleless languages such as many Slavic ones, in which articleless noun phrases lack a wide scope existential interpretation and can only have a non-specific indefinite interpretation (Geist 2010).<sup>17</sup>

<sup>17</sup> In this connection we also point out that articleless NPs in headlines in Dutch and German have a syntactic distribution which is different from that of their counterparts in the standard variety of articleless Slavic languages:

While we will not concern ourselves with justifying the type-shift operations themselves; we simply follow Chierchia (1998: 358) in assuming that the type-shift operations described above have a ‘Last Resort’ nature. This means that a language or language variety only uses them if a morpheme (or a structure) whose semantic contribution is identical to a type-shift operation is not available. Chierchia proposes this *blocking* restriction on the use of type-shift operations to explain why a language like English must use the definite article instead of the semantically equivalent IOTA shift or the indefinite article instead of the EX shift. We adopt Chierchia’s proposal for headlines and claim that headlines is a language (variety) that fundamentally lacks definite and indefinite articles (see section 4). Instead of these articles, definite and indefinite readings are achieved by means of abstract semantic operations such as type shifting.

In this section, we hope to have provided evidence that the analysis of articleless noun phrases in Dutch (and German) headlines as DP-less NPs/NumPs has various advantages that outweigh its possible disadvantages. First of all, it does not necessitate the assumption that headlines feature many distinct null articles with different semantic import but an identical null form. Second, it captures the syntactic distribution of articleless noun phrases that exhibits no syntactic limitations of the sort characteristic of null elements. Third, it makes the syntactic representation of these noun phrases minimal in that it transparently matches their morphosyntactic properties and does not assume any category that is not lexicalised in some way.

It is important to note that assuming a minimal NP/NumP syntax for these phrases does not run into problems when it comes to categorial selection. As Bruening *et al.* (2018) argue (see also Salzmann 2020 for a similar conclusion), while verbs show categorial selection for propositional complements (CP, TP, vP or VP), they do not show evidence for similar syntactic selection for their nominal complement. In other words, there are no cases of verbs that allow for a DP complement and reject an NP or NumP complement, as a case of categorial selection (and not semantic selection). It is therefore possible to assume that a verb that occurs with a DP complement in standard German can combine with a NumP or NP complement in headline German. In this respect we also side with proposals that do not tie the argumental status of a nominal constituent to the presence of a DP layer in the noun phrase (Bošković 2008, 2012, 2014; Trenkic 2004; Zlatić 1997; Chierchia 1998 among others).

Finally, as we show in the next section, assuming no D and no DP layer in these phrases also allows us to explain the other side of the puzzle we address in this paper: as the only one of the three analytical options we reviewed, it predicts the right agreement endings on attributive adjectives. As there is no D layer, D is not a factor in determining the form of other elements in the noun phrase.

### 3. Evidence from adjectival agreement

In this section we zoom in on the morphological evidence for the conclusion we reached in the previous section, that is, that the articleless noun phrases under discussion are simply that: articleless. Their structure does not contain a DP.

Our main focus will be on German data, because the rich array of forms displayed in the nominal domain in this language, as presented in Tables 1-3 in Section 1, enables us to clarify things in a way that would not be possible on the basis of Dutch, even though, as we will point out, the same can be shown to be pertinent in Dutch, be it much less clearly.

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there, NPs with an indefinite interpretation usually do not appear in clause-initial position (see Geist 2010 for Russian and Šimik and Burianová 2020 for Czech), but they are perfectly fine in such positions in Dutch and German headlines, as we have seen, e.g., the examples (1a), (18a), (19b), (19c) and (21a) above.

When we looked at the Tables 1-3 earlier on, we only paid attention to the endings on the adjectives, distinguishing three different paradigms, noting that the endings of Paradigm 3, the paradigm we see in articleless noun phrases, were different from the ones in the other two – articulated – paradigms. We ignored the endings on the determiner.<sup>18</sup> When we take these into consideration as well, we see, as observed by Schlenker (1999, 118) and others, that, with a few exceptions, the endings that appear on the adjective in Tables 3a and 3b, are essentially the same as the endings that appear on the definite and indefinite articles in Tables 1a and 1b and Table 2.<sup>19</sup>

Before we continue, let's note once more that attributive adjectives in bare nouns in standard German and Dutch – essentially bare mass nouns and bare plurals – show the Paradigm 3 endings, just like the articleless nouns in headlines. Here are two German examples.

- (32) a. Ich trinke kalt-es Wasser aus dem Kühlschrank.  
           I drink cold-AGR water out the fridge  
           'I drink cold water from the fridge.'  
       b. Lecker-e Äpfel sind gesund.  
           tasty-AGR apples are healthy  
           'Tasty apples are healthy.'

Crucially, however, as observed in Section 1, in the standard language, such nouns, though possible with an indefinite and kind interpretation, never have a definite interpretation. In line with this, we can assume an indefinite null determiner in such phrases (Longobardi 1994; Heim 2011, among others) and the agreement on the adjective is compatible with (in fact, predicted by) the existence of an indefinite article.

- (33) a. Ich trinke Ø<sub>indef</sub> kalt-es Wasser aus dem Kühlschrank.  
           I drink cold-AGR water out the fridge  
       b. Ø<sub>indef</sub> Lecker-e Äpfel sind gesund.  
           tasty-AGR apples are healthy

As shown in Section 2, however, the articleless nouns in headlines can have a definite interpretation as well. As concluded there, if we consider a null determiner to have the same set of syntactic features as the overt counterpart, the postulation of a definite null determiner predicts the wrong morphology on the adjective. That was why we decided that we are better off if we do not postulate a null determiner and instead propose that there is no D-layer at all, not just for definite noun phrases but for all articleless noun phrases in headlines:

- (34) a. Brexit: [NumP Britisch-es Unterhaus ] stimmt Handelsabkommen mit der EU zu (cf. (2))  
           Brexit: British-AGR parliament.NEUT votes trade.agreement with the EU PRT  
       b. Capelse Lucky Luke opent [NumP nieuw-ø stripmuseum] (cf. (5e))  
           Capelle.ADJ Lucky Luke opens new-AGR cartoon.museum.NEUT  
       c. Verunglückter Siebert in [NumP schwer-er Krise] (cf. (7c))  
           crashed Siebert in heavy-AGR crisis.FEM

<sup>18</sup> We also ignored, and will continue to do so, the endings that appear on the noun in singular genitive masculine and neuter nouns, plural datives and, occasionally, singular dative masculine nouns.

<sup>19</sup> The exceptions include the genitive ending for neuter and masculine singulars, that is *-en* rather than *-es*. The determiner in Table 2 misses an ending with nominative masculine and nominative and accusative neuter nouns, a point that will be taken up below.

The question that remains, however is: How can we explain the inflectional endings on the adjectives in noun phrases in headlines?

We just observed, with Schlenker (1999), that with a few exceptions, the endings on the adjectives in articleless nouns in German headlines are the same as the endings on the determiner in the standard language. Schlenker (1999, 118) goes on to observe that, taking all paradigms into consideration, the endings in question are found on the first (perhaps highest) element in the noun phrase: on the determiner if there is one, and if there is no determiner, we find them on the adjective, if there is one.

An approach to these data that seems to suggest itself is to take the adjectives in Table 3 to have moved to the position in the structure occupied by the determiner in the noun phrases in Tables 1 and 2 (Milner and Milner 1972; Leu 2008, Ch 3; 2015). On the (tacit) assumption that, independently, there are suffixes to be supported, we further assume, that if there is no D to support them, the adjective moves up to perform that function.

What is important to realise, however, is that we only have the flectional endings when we have more material in the phrase than just a single noun. Determiners and adjectives bear flection, but a bare noun never does. If these endings are independently there, say, in the D-position, and have to be carried by something, then why don't they appear on the noun if all we have is a bare noun? In short, the morphological endings are not linked to a certain position.<sup>20</sup>

However, if we take the flectional endings as concord or agreement endings (as we have been labeling them all along), the lack of endings on a bare and adjectiveless N can be explained: after all, only if we have two or more elements in a phrase, does (the need for) agreement (or concord) come into play. The combination of a head or a phrase with another head or another phrase requires some kind of tuning or concord. In the nominal domain in languages like German, concord must be morphologically expressed. A German noun has a certain Gender and Number and, in a sentence, a certain Case, and the introduction of a D head leads to an agreement relation so that the D concurs with the noun in Gender, Number and Case. The same mechanism takes place when an attributive adjective is introduced into the phrase.

The German data in the tables above furthermore show that there are two types of agreement paradigms, primary and secondary (see fn. 4). The primary type expresses more morphological distinctions regarding Gender, Number and Case than does the secondary type (Schlenker 1999; Tseng 2009). As we have seen, the richer primary type of agreement is typically found on the determiner, but in the absence of a determiner, it can be borne by an adjective. If a noun is accompanied by both a determiner and an adjective, the D head is adorned with the primary agreement endings, while the adjective is marked with the secondary agreement endings. In other words, the occurrence of the secondary agreement endings is dependent on the presence of a D.<sup>21</sup>

Note that for our argument, it is not necessary to be specific about the exact mechanism in which concord or agreement is supposed to work, that is, whether or not separate heads like D, Agr or N, are involved (Schoorlemmer 2012, Corver 1997, Emonds 2012, respectively). Crucial to the argument is precisely the observation that the appearance of the secondary agreement on the adjective is dependent on the presence of a D head. If concord is structural and links the secondary agreement on the adjective to the syntactic presence of a D head, it should not matter

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<sup>20</sup> For an evaluation of the movement approach, see also Roehrs (2015).

<sup>21</sup> In Tseng's (2009, 81) words, which echo Schlenker (1999): "The situation can be described in functional terms. The strong [for us, primary - AL/RS] endings are the most informative indicators of number, gender, and case within the noun phrase (the noun itself having relatively poor inflection). Since the determiner generally appears initially, it makes sense for it to provide this information, leaving the following adjective to take the less distinctive weak [for us, secondary - AL/RS] inflection. If there is no determiner, or if for lexical reasons the determiner does not bear strong inflection, the adjective assumes a more important role."

whether the D head is phonologically empty or not. Whether overt or null, if there is a D head, we expect the adjectives to be suffixed with the secondary agreement markers. This expectation is, however, not met, as we have seen.

A way around this problem would be to assume that the agreement is not syntactic, but rather morphological, in the sense that the secondary morphology on the adjective only shows up when there is an overt determiner c-commanding it in the structure. It is, however, not easy to see how the form of the agreement on the lower adjective can be made dependent on the overtness of the higher determiner; this is the point made in Schlenker (1999). Whether we generate a specific Agr head in the structure for the agreement morphemes or not (let's assume we do so for ease of explication), we cannot wait with the insertion of a morpheme in this lower position until a higher item has been inserted, because lexical insertion is cyclic. This is certainly the case for syntactic structure building which we are considering (the derivation of a noun phrase consisting of independent vocabulary items) and it is also the case in word-formation processes, where allomorphy has been shown to be inward-sensitive (Bobaljik 2000): at the point where the lower agreement is spelled out, there is no way of looking outward (to the higher syntactic structure) for information about overtness of any head above. In short, a morphological account of adjectival agreement is not tenable.

We conclude that the primary agreement markers appear independent of the presence of a D head. They are, as we concluded earlier on, not linked to a certain position or a position with certain properties. We concur with Schlenker (1999) (and Tseng 2009) in stating that the highest of the two categories (determiner or adjective) in the phrase will get them. If there is no D, the adjective gets the primary agreement markers, which is exactly the situation we find in headline noun phrases with an attributive adjective.

There seem to be three exceptions to the generalisation that the highest category is marked by the primary ending. They can be found, in the standard language, in Table 2, repeated here as Table 7, with shading applied to the cells in question:

Table 7. Paradigm 2: Paradigm with adjective and indefinite article (German)

|     | MASC   |          |         | FEM    |          |      | NEUT   |          |         |
|-----|--------|----------|---------|--------|----------|------|--------|----------|---------|
| NOM | ein-   | klein-er | Mann    | ein-e  | klein-e  | Frau | ein-   | klein-es | Kind    |
| ACC | ein-en | klein-en | Mann    | ein-e  | klein-e  | Frau | ein-   | klein-es | Kind    |
| GEN | ein-es | klein-en | Mann-es | ein-er | klein-en | Frau | ein-es | klein-en | Kind-es |
| DAT | ein-em | klein-en | Mann    | ein-er | klein-en | Frau | ein-em | klein-en | Kind    |

Table 7 shows that all genitive and dative forms show the pattern described above: there is a determiner, the determiner carries the primary morphology and the adjective carries the uniform, neutralized (in Schlenker's terms "default"; p. 121) secondary *-en* ending. However, in the nominative masculine and nominative and accusative neuter forms, the primary agreement endings are on the adjective, despite the presence of an overt determiner, counterexemplifying the claim made above. Note, however, that the determiners in these three cases have no ending at all. When we take the other nominative and accusative forms in Table 2/7 into consideration as well (i.e., the accusative masculine and nominative and accusative feminine forms), we could interpret the pattern as follows: in the nominative masculine and nominative and accusative neuter slots of Paradigm 2, the adjective agrees in form with the determiner and the ending on the determiner has been dropped.<sup>22</sup>

<sup>22</sup> Note that the ending we assume to be present on the determiner surfaces when the noun and its adjectival modifier (when present) undergo deletion. In this case, an *-ein* word (see fn. 5) necessarily comes to bear primary inflection; compare the uninflected indefinite and its inflected form, in examples (i) and (ii), from Murphy (2018):

(i) Ein Brief is für dich angekommen, und ein-er für mich auch.  
a-Ø letter.MASC is for you arrived and one-MASC.NOM for me too  
'A letter arrived for you and one for me too.'

Table 8. Paradigm 2: Paradigm with adjective and indefinite article (German) (our analysis)

|     | MASC              |          |         | FEM    |          |      | NEUT                |          |         |
|-----|-------------------|----------|---------|--------|----------|------|---------------------|----------|---------|
| NOM | ein- <del>e</del> | klein-er | Mann    | ein-e  | klein-e  | Frau | ein- <del>e</del> s | klein-es | Kind    |
| ACC | ein-en            | klein-en | Mann    | ein-e  | klein-e  | Frau | ein- <del>e</del> s | klein-es | Kind    |
| GEN | ein-es            | klein-en | Mann-es | ein-er | klein-en | Frau | ein-es              | klein-en | Kind-es |
| DAT | ein-em            | klein-en | Mann    | ein-er | klein-en | Frau | ein-em              | klein-en | Kind    |

In other words, the primary agreement markers on the adjective are there as a result of them agreeing with the D. Viewed this way, they do not form a counterexample to the claim about the distribution of primary and secondary agreement markers made earlier on.

The Dutch paradigm shows the same pattern as the German one, be it on a more modest scale. For Dutch we can also claim that there is a primary and a secondary set of agreement markers. The secondary agreement marker is *-e*: with one exception, it appears on the adjective whenever there is an overt or covert determiner. The exception is the indefinite neuter case, in which case we have the zero marker,  $\emptyset$ . The primary marker is (again; hence the fuzzy picture) *-e* for common gender nouns and  $\emptyset$  for neuter nouns. Assuming that, like in German, the definite article consists of a *d-* plus the primary agreement marker, we get *d-e* and *d- $\emptyset$* , the latter made pronounceable (including final devoicing) as *(h)e-t*.<sup>23</sup>

We can also treat Paradigm 2 in Dutch the same as we analysed the nominative and accusative forms in Paradigm 2 in German: the indefinite determiner and the adjective agree, but, just like the masculine nominative and neuter nominative and accusative in German, the agreement marker is dropped from the indefinite article. This is shown in Table 9, adapted from Table 5 in line with Table 8 as an adaptation of Table 2.

Table 9. Paradigm 2: Paradigm with adjective and indefinite article (Dutch) (our analysis)

| COMMON            |         |       | NEUT             |                    |      |
|-------------------|---------|-------|------------------|--------------------|------|
| een- <del>e</del> | klein-e | vrouw | een- $\emptyset$ | klein- $\emptyset$ | kind |

The agreement we see in headlines Dutch and German supports the conclusion reached in Section 2, that the structure of articleless noun phrases in this register has no DP layer. The primary agreement markers appear independent of the presence of a D head. Whichever is the highest element (the determiner or the adjective) in the phrase in addition to the noun itself, will bear the primary agreement (cf. Schlenker 1999 and Tseng 2009). In standard German and Dutch, it is the determiner, in Dutch and German headlines, it is the adjective.

#### 4. Summary and further discussion

This paper investigated the meaning and syntactic properties of articleless noun phrases in Dutch and German, dedicating special attention to the agreement morphology we find on attributive adjectives contained in them. It revealed that this morphology is rather puzzling under the view that these noun phrases are full DPs with a surface-deleted or null determiner. In Section 2, we carried out a case study of a representative set of Dutch headlines zooming in on the syntactic distribution and interpretation of articleless noun phrases. Both the semantic and

(ii) Ich    habe    ein    neu-es                Buch            und    du    hast    auch    ein-es.  
       I        have    a- $\emptyset$     new-NEUT.ACC    book.NEUT    and    you    have    also    one-NEUT.ACC  
       ‘I have a new book and you have one too.’

<sup>23</sup> This last point is pure speculation on our part, but it is not inconsistent with the etymology of the article *het* in Philippa *et al.* (2003-2009).

distributional evidence presented there and the morphological evidence presented in Section 3 led to the conclusion that articleless noun phrases in German and Dutch headlines (and, presumably, other abbreviated contexts) involve no DP layer, they are generated as bare NPs/NumPs.

We consider “headlines Dutch”, “headlines German” etc. as linguistic entities (languages perhaps), with their own grammar, a grammar that is furthermore not identical to that of their respective standard counterparts. In our view, this headlines variety fundamentally lacks definite and indefinite articles. For this reason, the headlines variety should not be treated as derivative of the spoken counterpart or described in terms of the latter, suggesting that articles are “omitted” or talking about the phrases as having been “abbreviated” (“abbreviated English”—Stowell 1991) or “reduced” (“Reduced Written Register” – Weir 2017). This point of view is different from de Lange’s (2008), who comments on headlines facts as follows (p. 67): “These examples already suggest that presence of articles is not necessarily something required by the rules of grammar [of standard Dutch and Italian]. After all, if this were so it would be somewhat of a mystery why these rules can be violated in special circumstances.” We would say that there is no mystery if we look at headlines varieties in their own right.

De Lange has a point, of course, that in standard Dutch, Italian, German and English (and, no doubt, other standard languages), a determiner is not always required, just as there are languages that have no determiner at all, like Slavic and Sinitic languages. We would like to emphasise that we drew our conclusions after investigating headlines Dutch and German only. Not all phrases which have no article or determiner must necessarily be analysed in the same way. We already saw that bare nouns in standard German must be analysed in a different way than articleless nouns in headlines German. They have different properties, as is the case with bare nouns in Slavic languages, as noted in fn. 17.

In closing, we would like make two comments related to mixing of registers/varieties. First, not all headlines are in headlines. As already alluded to in fn. 2, articleless noun phrases in the headlines have a higher frequency in newsflashes and news items whose focus is on the concise presentation of facts, rather than providing background information, analysis or subjective opinion (Oosterhof and Rawoens 2017). This is not to say that newsflash headlines must necessarily lack articles or that other types of newsitems cannot feature articleless NPs. The following two newsflash headlines contain articles and we consider these to be in the standard language.

- (36) a. Rijsbergen groeit met een compleet nieuwe wijk  
 Rijsbergen grows with a completely new district  
 ‘Rijsbergen becomes bigger thanks to a totally new district’  
 (BN DeStem, 12.2.22)
- b. Misschien wel het duurste plan in de Eerselse geschiedenis  
 perhaps AFF the most.expensive plan in the Eersel.ADJ history  
 ‘Perhaps the most expensive plan in the history of Eersel’  
 (Eindhovens Dagblad.nl, 02.06.22)

In addition, we do not exclude the possibility that one comes across headlines in which the two registers/varieties are mixed and which exhibit both articleless and articulated noun phrases, but following the proposal of Reich (2017) we predict that such mixing of registers can only happen under certain conditions and in a restricted manner.<sup>24</sup>

<sup>24</sup> Reich (2017) identifies such a restriction citing the observation made in Stowell (1991), namely that an overt article in a headline is well-formed if c-commanded by an NP with a null article (cf. i), but an omitted article is ill-formed if it is c-commanded by a nominal with an overt article (cf. ii).

(i) Kuh springt durch ein Fenster in Küche (Reich 2017: 27a)



Second, talking about mixing, we want to point out that data similar to what we described in this paper can also be found in other situationally defined language varieties whose communicative purpose is to provide information in a succinct and timely manner, but not necessarily restricted to written registers. Here is a train announcement, heard on 9.9.2021 at 22.40 hours on the train from Amsterdam to Leiden, illustrating the same phenomenon.

- (37) Volgend-ø station is Amsterdam Sloterdijk.  
 next-ARG station.NEUT is Amsterdam Sloterdijk  
 ‘The next station is Amsterdam Sloterdijk’

It also seems to us that we can find isolated expressions in standard Dutch and German, the form-meaning combination of which can only be explained in the way we treated the articleless noun phrases in headlines in this paper. The type of phrases we refer to are common and frequent nominal expressions like the following from Dutch in (38) and from German in (39), which are used with an adverbial meaning.

- |      |    |                          |                                                      |               |
|------|----|--------------------------|------------------------------------------------------|---------------|
| (38) | a. | volgend-ø jaar           | { -ø <sub>PRIMARY</sub> /*-e <sub>SECONDARY</sub> }  | <i>Dutch</i>  |
|      |    | ‘next-AGR year.NEUT’     |                                                      |               |
|      | b. | vorig-ø semester         | { -ø <sub>PRIMARY</sub> /*-e <sub>SECONDARY</sub> }  |               |
|      |    | ‘last-AGR semester.NEUT’ |                                                      |               |
| (39) | a. | vorig-es Mal             | { -e <sub>SPRIMARY</sub> /*-e <sub>SECONDARY</sub> } | <i>German</i> |
|      |    | ‘last-AGR time.NEUT’     |                                                      |               |
|      | b. | nächst-es Semester       | { -e <sub>SPRIMARY</sub> /*-e <sub>SECONDARY</sub> } |               |
|      |    | ‘next-AGR semester.NEUT’ |                                                      |               |

Importantly, these frequent expressions, just like the headlines in (2a), (3a) and (5), exhibit the primary agreement on the adjective *if there is no determiner preceding the adjective*. With an overt determiner, adjectival inflection exhibits the secondary agreement endings, cf. (40) and (41) respectively.<sup>25</sup>

- |      |    |                               |                                                     |              |
|------|----|-------------------------------|-----------------------------------------------------|--------------|
| (40) | a. | het volgend-e jaar            | { *-ø <sub>PRIMARY</sub> /-e <sub>SECONDARY</sub> } | <i>Dutch</i> |
|      |    | ‘the following-AGR year.NEUT’ |                                                     |              |
|      | b. | het vorig-e semester          | { *-ø <sub>PRIMARY</sub> /-e <sub>SECONDARY</sub> } |              |
|      |    | ‘the last-AGR semester.NEUT’  |                                                     |              |

- 
- |        |                                                 |                   |
|--------|-------------------------------------------------|-------------------|
|        | cow jumps through a window in kitchen           |                   |
|        | ‘A cow jumps through a window into the kitchen’ |                   |
| (ii) * | Eine Kuh springt durch Fenster in Küche         | (Reich 2017: 29a) |
|        | a cow jumps through window in kitchen           |                   |
|        | ‘A cow jumps through a window into the kitchen’ |                   |

To explain this regularity, Reich proposes that the headlines register in English and German uses a specific parsing strategy he calls *discourse orientation*, in which a zero event topic identifies the event variable, instead of allowing for the existential interpretation of the event variable as in the standard register of these languages (the so-called *sentence-orientation* strategy). Using this distinction, the data above can be made sense of assuming that the first overt article encountered determines the processing strategy, and while switching from discourse-orientation to sentence-orientation in the course of processing (as in i) is allowed, switching from sentence-orientation to discourse-orientation (as in ii) is not. Restrictions of this type are exactly what we expect to find if articleless and articles NPs in a headline belong to different registers.

<sup>25</sup> And for this reason, the expressions in (38) are clearly different from the standard Dutch noun phrases where the agreement ending *-e* is dropped on attributive adjectives even in the presence of a determiner, which we mentioned in fn. 7.

- (41) a.    das    vorig-e                    Mal                    { \*-e<sub>SPRIMARY</sub>/ -e<sub>SECONDARY</sub> }                    *German*  
           ‘the    last-AGR                    time.NEUT’  
       b.    das    nächst-e                    Semester                    { \*-e<sub>SPRIMARY</sub>/ -e<sub>SECONDARY</sub> }  
           ‘the    following-AGR                    semester.NEUT’

How exactly examples like (38)/(39) come about, and how they can be related to any situationally defined language variety, is a question we leave for further research.

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