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The Inner Makeup of Definite Determiners: The Case of Germanic

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This paper studies the internal structure of definite articles and demonstratives in twelve Germanic languages. Examining synchronic and diachronic data as well as systematic gaps, it seeks to illuminate the nature of definiteness markers and inflections, *d-* and *-er* in German *d-er* 'the' and *d-ies-er* 'this', with the goal of identifying some consequences for the syntax of the determiner phrase as a whole. Arguing that definiteness markers are semantically vacuous elements, the paper proposes that articles involve an inflectional head in the syntax and demonstratives consist of an inflectional and a deictic head. Isomorphic correspondences between overt components and abstract syntactic structure may be partially or completely "masked" by postsyntactic operations.[*]

1. Introduction.

Lyons (1999:107) states that probably all languages have demonstratives as part of their lexical inventory (also Diessel 1999). A number of languages also have definite articles in their vocabulary. Both of these elements are often referred to as DETERMINERS (Giusti 1997). This paper studies the inner makeup of these elements in the Germanic languages proposing that they have internal structure. In so doing, this investigation seeks to uncover and explain some synchronic and diachronic regularities that these determiners have in common. I make a few crosslinguistic remarks where I focus on the Romance languages. One important

[*] In some aspects, this paper can be understood as a successor to Roehrs 2010. Specifically, while the internal structure of demonstratives is refined and modified here, the other syntactic claims of Roehrs 2010 are compatible with the current proposal. Parts of the current paper were presented at the University of Wisconsin–Milwaukee and Indiana University. I thank the audience for questions and comments. Special thanks go to the reviewers for many helpful comments and Michael Putnam for early collaboration on this project. All remaining shortcomings and inconsistencies are, of course, my own.

consequence of the discussion is that this type of analysis makes clear predictions about possible and impossible forms of determiners. More generally, I argue that all determiners are part of extended projections (Grimshaw 2005), albeit in slightly different ways.

In order to uncover the inner structure of determiners, I employ a segmentation approach. This type of method involves the parsing of vocabulary items into individual components (Klinge 2008). These lexical subparts are then matched to abstract structure (Leu 2008, Roehrs 2010 and references cited therein). I start with the basic facts in German, which present the most straightforward case; that is, the determiners in this language can be neatly parsed into their individual components. Given these cases of complete isomorphism, divergences from this transparency are easy to identify, and they call for an explanation.[1]

In the first part of this introduction, I present the data in a general fashion. These initial observations give rise to hypotheses that are taken up later in the paper. In the second part of the introduction, I sketch my proposal (later in the paper, after I have discussed previous work on this topic, I develop my own proposal in more detail). In the final part of the introduction, I briefly comment on the advantages of a segmentation approach over simple memorization of the determiner forms.

1.1. Synchronic Transparency of Germanic Articles and Demonstatives. German has definite articles and demonstratives. Compare 1a to 1b,c.[2] These determiners agree with their head noun in gender, number, and

[1] For those readers not familiar with this type of method, I briefly discuss one example. The German proximal demonstrative *dieser* 'this' can be parsed into three components: a definiteness marker (*d*), a deictic element (*ies*), and an inflection (*er*). These components can be associated with a certain number of heads in the structure and a specific sequence of these heads. Given certain arguments to be developed below, the definiteness marker does not involve a head. In contrast, the deictic element forms a head and builds an extended projection in the sense of Grimshaw 2005. The inflection also involves a head closing off that projection. To be clear, a segmentation approach applied to demonstratives yields two heads in the syntax.

[2] German has a third type of demonstrative, *jener* 'that', to which I turn below. To indicate the difference between the article and the orthographically identical demonstrative, I put an accent mark on the stressed vowel of the demonstrative. To avoid confusion, I do not do this for Afrikaans, Faroese, and Icelandic

case. Unlike the articles, the demonstratives are deictic in nature, and they are usually stressed. Their deictic properties may vary. Specifically, from the speaker's perspective, the demonstratives in 1b are distal and the ones in 1c are proximal (see Lyons 1999:18, 107). I label the former type SIMPLE DEMONSTRATIVE and the latter type, which involves an *-s-*, COMPLEX DEMONSTRATIVE.

(1) German

	MASC.	FEM.	NEUT.	PL.
a.	der Hund the dog	die Katze the cat	das Pferd the horse	die Tiere the animals
b.	dér Hund that dog	díe Katze that cat	dás Pferd that horse	díe Tiere those animals
c.	dieser Hund this dog	diese Katze this cat	dieses Pferd this horse	diese Tiere these animals

For the remainder of these preliminary remarks, I limit myself to the masculine nominative forms.

It is a widespread intuition that definite determiners are complex elements with inner structure (for references, see section 2). Considering the determiners in 1, it is evident that these vocabulary items share at least two components. First, parsing the definite article *der* 'the' from left to right, in 2a one observes that this determiner has an initial element that occurs elsewhere: The two types of demonstratives, relative pronouns, complementizers, and deictic adverbs have it too, as shown in 2b. I call this shared element DEFINITENESS MARKER, a term borrowed from Rijkhoff 2002.

(which already have accent marks as part of their spelling systems). In the interest of saving space, a translation is only provided in the main text if an idiomatic rendering is significantly different from the gloss.

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(2) a. d-er
the

b. d-ér, d-ieser, d-essen, d-ass, d-ort, d-ann
that, this, whose, that, there, then

With Leu (2008) and others, I argue that this commonality is not accidental. I claim that determiners have inner structure.

Second, parsing the definite article from right to left, in 3a one also notices that this determiner exhibits an ending that occurs elsewhere in German: It surfaces on demonstratives, adjectives, and quantifiers, as shown in 3b.

(3) a. d-er
the

b. d-ér, dies-er, gut-er, manch-er
that, this, good, some

In other words, identical inflections appear on different lexical items (for example, Duden 1995:277). In line with the first parsing, I argue that this is not an accidental state of affairs, but that these right-most components are regular inflections. Again, I claim that determiners have internal structure. While the parsing of the definite article (*d-er*) and the simple demonstrative (*d-ér*) may not seem very revealing, the segmentation of the complex demonstrative leads to a tripartite makeup: *d-ies-er*. I label the element in the middle DEICTIC PART. This type of component works as an instruction for the listener to identify a specific entity that is close to the speaker (that is, proximal) or farther away (that is, distal). With Leu (2008) and Roehrs (2010), I claim that all demonstratives, including simple demonstratives, have a deictic part. Resuming the comparison of the definite article and the demonstratives, I combine these two lines of inquiry by formulating the first hypothesis:

(4) *Hypothesis 1a (to be amended): Synchronic Relatedness of Definite Determiners*

Definite determiners are transparent with regard to the definiteness marker and the inflection.

The main goal of this paper is to illuminate the syntactic nature of the definiteness marker and the inflection, thereby identifying some consequences for the structure of the determiner phrase (DP) as a whole. Interestingly, a relatively small number of cases show divergences from this complete transparency.

1.2. Partial and Complete Opacity.
A cursory glance at other determiners reveals that some cases are less straightforward. The relevant cases may diverge from complete transparency in three ways: These determiners may not share the definiteness marker, they may not share the inflection, or they may share neither.

First, as seen above, German has a definite article and two types of demonstratives that share the definiteness marker. However, this language has a third type of demonstrative, *jener* 'that', that differs in that regard, as shown in 5a. Considering the inflection on *jener*, this determiner has a different stem form and is thus partially opaque. I refer to this distinction in stem forms as RELATED versus UNRELATED: Related stems share the definiteness marker, while unrelated ones do not (where deemed helpful, opaque components appear in bold or underlined).

Second, determiners may not share the inflection; instead, they may show divergences in their right-most components. This is particularly clear with determiners in English, where the endings differ, as shown in 5b. I label this difference between German and English as REGULAR INFLECTIONS versus IRREGULAR ENDINGS: Regular inflections occur elsewhere in the grammar, while irregular endings do not, at least not in a systematic way.

(5) a. der **jen**er (German)
the that

b. th**e** th**is** (English)

Third, in Icelandic determiners share neither the definiteness marker nor the inflection. Icelandic has a demonstrative, *sá* 'that', that exhibits both an unrelated stem and an irregular ending at the same time, as shown in 6a (note that the definite article can surface either as a free form or as a suffix). As such, this determiner is completely opaque with regard to its internal makeup. Finally, while all the Germanic languages

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have at least one related article and at least one related demonstrative, the Romance languages, here exemplified by French in 6b, do not have related stem forms at all (Kayne & Pollock 2010, Roehrs 2010:238). In other words, they are systematically different in this regard (below, I show that these languages vary in inflection).

(6) a. (h-)inn/hinn **sá** (Icelandic)
the /that that

b. **le** **ce** (French)
the this

I take this to be an important typological difference between the Germanic and the Romance languages that calls for an explanation.

To sum up thus far, one can observe that definite determiners vary with regard to their stem forms and their inflections in interesting ways. Exemplifying with German, English, Icelandic, and French, I have documented cases where the degree of isomorphism ranges from completely transparent to partially opaque to completely opaque. I can now formulate an amendment to the first hypothesis discussed above:

(7) *Hypothesis 1b (amendment to hypothesis 1a)*

Definite determiners may also be partially or completely opaque:

(i) Partial opacity: Determiners do not share either the definiteness marker or the inflection.

(ii) Complete opacity: Determiners share neither the definiteness marker nor the inflection.

Despite appearances, I claim that all these determiner forms involve the same inner makeup. I argue that the abstract syntactic structure is the same and the differences only hold on the surface.

1.3. Diachronic Relation among Definite Determiners.
I return to the most common patterns in German, the completely transparent determiner forms. Earlier stages of German(ic) had a different determiner system. While the simple demonstrative in 8a is the oldest determiner, the complex demonstrative and the definite article in 8b are

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later developments.[3] I follow the traditional claim that the simple demonstrative formed the source from which the definite article (Diessel 1999:128, Harbert 2007:142, Lyons 1999:331) and the complex demonstrative (Haspelmath 1993) developed. I claim that as a consequence of these later developments, the original simple demonstrative changed in its segmental composition.

(8) a. sá, þat (Proto-Scandinavian)
that

b. der, dieser, dér (Modern German)
the, this, that

These historical developments can be summed up as follows:

(9) *Hypothesis 2: Diachronic Relation among Definite Determiners*

The definite article, the complex demonstrative, and the simple demonstrative are related to the simple demonstrative of the older variety of the same language.[4]

To be clear and putting the small number of opaque instances aside for now (hypothesis 1b), definite determiners in the Germanic languages are synchronically and diachronically related.

1.4. The Inner Makeup of Determiners.
With the above hypotheses in mind, the four definite determiners in German are analyzed as complex elements made up of components such as definiteness markers and inflections, as in 10. Recall now that demonstratives are deictic in nature and are usually stressed. I make the plausible and minimal assumption that these two properties coincide in

[3] The changes in question were already underway in Old High German (OHG). Unfortunately, there are no relevant documents preserved predating OHG. As such, I provide here the masculine and neuter nominative singular forms of the simple demonstrative from Proto-Scandinavian.

[4] This statement holds for the West Germanic languages but is later modified for North Germanic.

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one element in the demonstrative structure. This can most clearly be seen in the unrelated demonstrative *jener* 'that' in 10d, where the stem *jen-*, but not the inflection *-er*, involves deixis and stress. Furthermore, articles do not involve deixis. As such, the definiteness marker in 10a, and by extension also in 10b,c, cannot be a deictic element and be responsible for stress. If so, deixis and stress are brought about by *-ies-* in 10c. To obtain a parallel and thus simple analysis of all demonstratives, I claim that the simple demonstrative in 10b is also complex in its makeup such that it involves a segmentally unrealized element bringing about deixis and stress (Leu 2008, Roehrs 2010).

(10) a. d-er
the

b. d-ér
that

c. d-ies-er
this

d. jen-er
that

This leaves the status of the definiteness marker to be discussed. This element seems to be special. Recalling that complementizers such as *d-ass* 'that' and deictic adverbs such as *d-ort* 'there' and *d-ann* 'then' also have this element, I claim that the definiteness marker has nothing to do with definiteness per se, at least not in the contemporary languages. I propose that definiteness is brought about by the feature [DEF]. Keeping traditional terminology, I argue that the definiteness marker is a semantically vacuous element inserted late in the derivation, similar to *do*-support in English. If these considerations are on the right track, I can formulate my main hypothesis:

(11) *Hypothesis 3: Inner Makeup of Definite Determiners*

Articles only involve an inflection.
Demonstratives only involve a deictic element and an inflection.

Notice that 11 is consistent with the commonly held assumption that articles are heads, while demonstratives are phrases (Brugè 1996, Giusti 1997, Leu 2008, Roehrs 2009:38, 2010 and references cited therein). If the hypothesis in 11 turns out to be correct, then there are some important consequences. For instance, hypothesis 3 implies that articles with more than one element and demonstratives with more than two elements

are not possible. In other words, this paper makes clear predictions about what types of articles and demonstratives can exist in the Germanic languages and, presumably, in natural language in general. As I show below, this analysis has important ramifications for the structure of the DP as a whole: It predicts that all determiners are part of extended projections.

To sum up these preliminary remarks, I have introduced the main empirical and structural claims that this paper seeks to explain. With this in mind, in the next subsection I anticipate the new proposal.

1.5. A Brief Sketch of the Novel Proposal.

In this part of the introduction, I briefly outline my proposal, which is fleshed out in more detail once some previous work has been reviewed (section 2). Recall that the main goal of this paper is to illuminate the syntactic nature of the definiteness marker and the inflection, and to identify possible consequences for the structural analysis of the DP as a whole. In the previous section, I identified individual components of the determiners. Now I move on to the second step in the segmentation approach, namely, to match these overt components with heads in the syntactic structure and to determine the sequence of these heads.

In his dissertation, Abney (1987) argues that noun phrases are not simply NPs but involve more structure. Formulating the DP-hypothesis, Abney (1987:284) proposes that all determiners are D-heads projecting a DP on top of NP. This proposal has been very influential, and it has been refined in many ways (for a survey, see Alexiadou et al. 2007). *Pace* Abney, I argue in detail that not all determiners are in D. Rather, articles are in D and demonstratives surface in Spec,DP (at least in the languages discussed here). While this claim is not novel, the specifics differ. I provide the basic workings of my proposal by discussing the definite article and the complex demonstrative in German.

Section 1.4 suggested that the definiteness marker is special in that it is a semantically vacuous element. If this is correct, then one can propose that articles only involve an inflection and demonstratives only contain a deictic part and an inflection. To be clear, I propose that the definiteness marker does not project in the syntax. Rather, it is the result of a process similar to *do*-support in English. In contrast, the inflection does involve a head in the syntax, and the deictic element does too. I call the former head Infl and the latter Deic. Above, I also pointed out that the

inflections on the determiners occur elsewhere, namely, on adjectives and quantifiers. I illustrate this with the dative plural, where all relevant endings are the same:

(12) a. mit d-en viel-en klein-en Kindern
with the-INFL many-INFL small-INFL children
'with the many small children'

b. mit dies-en viel-en klein-en Kindern
with these-INFL many-INFL small-INFL children
'with these many small children'

In view of these parallel properties, I claim that demonstratives, adjectives, and quantifiers all have the same basic structure. In line with Grimshaw 2005, I propose that the stems of these three elements, marked by X in 13, build an extended projection closed off by the inflection. Furthermore, the stem X undergoes head movement to "pick up" the inflection. The underlying structure and the following head movement can be schematized as follows.

(13) a. $[_{\text{InflP}}$ Infl $[_{\text{XP}}$ X]]
b. $[_{\text{InflP}}$ X_i-Infl $[_{\text{XP}}$ t_i]]

Unlike demonstratives, articles involve one head, Infl. I propose that articles still conform to 13a, where X stands for the head noun.[5] To make the structure of articles fully parallel to 13a, I replace D with Infl_{N}.
With the definiteness marker semantically vacuous, I propose that there is a feature in the syntax that definite articles, or, more generally, determiners, make visible. I refer to this feature as [DEF]. I follow Roehrs 2009 and Schoorlemmer 2012 in that this feature originates lower in the nominal structure and undergoes head movement adjoining to Infl_{N}. Illustrating the different determiners with the definite article first, the nominal in 12a is analyzed as in 14. The quantifier and adjective with

[5] Note that unlike demonstratives, adjectives, and quantifiers, this type of extended projection involves doubled exponents where both the head noun and the article have inflections (*d-en Kind-ern* 'the children'). I discuss this issue in detail in section 3.

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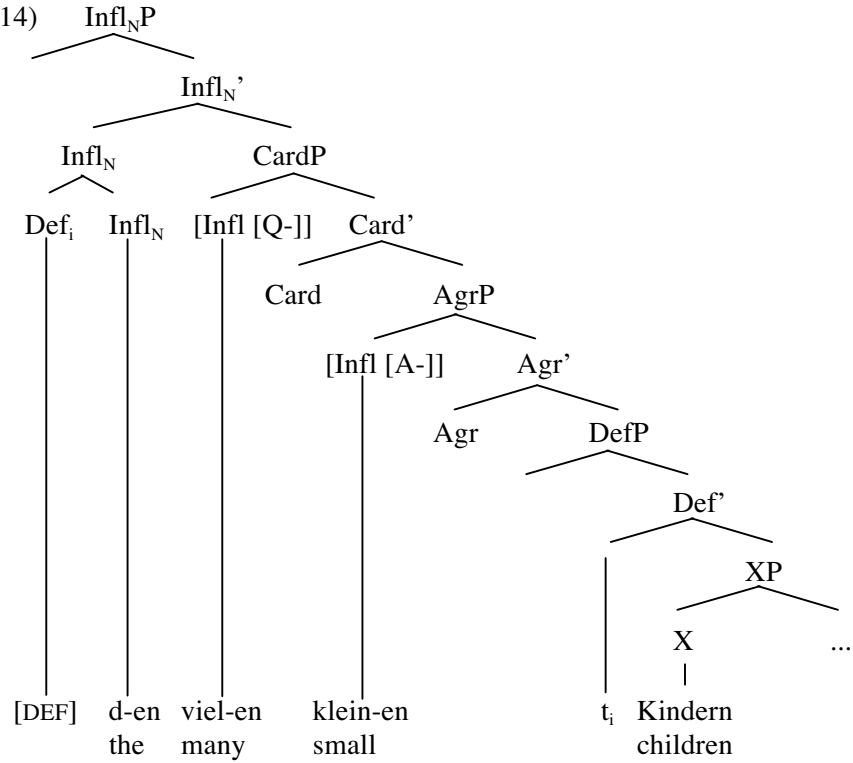
their derivations in 13a,b are in specifier positions of the matrix DP. Recall that the article makes [DEF] visible.

(14)



As for the demonstrative *diesen* 'these' in 12b, it has the subderivation in 13a,b. With this element surfacing in Spec,Infl$_N$P, the definiteness feature is made visible by the demonstrative and the definite article under Infl$_N$ is not pronounced (nonpronunciation is marked by strikethrough) (see 15 below).

To sum up, I sketched my proposal that articles involve one head in the syntax (Infl), and demonstratives involve two (Infl, Deic). Both determiners are part of extended projections. This accounts for the transparent cases in the determiner system in German. In view of the partially and completely opaque determiners, a skeptical reader might suggest that determiner forms are simply memorized and have no

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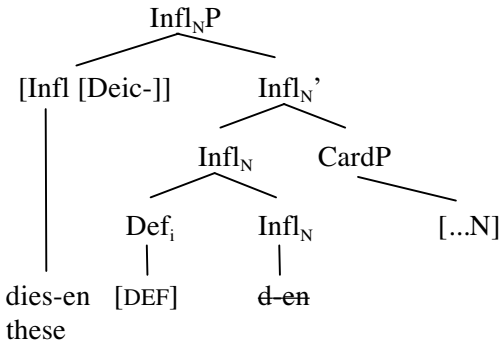
internal structure. Since this alternative seriously undermines the basic setup of this paper, I briefly address this objection here.

(15)



1.6. Alternative Proposal: Closed-Class Items are Unanalyzed Forms. An alternative to the proposal sketched in the last subsection would be to suggest that these determiners are simply memorized and thus their discussion is not morphosyntactically informative. This suggestion is certainly simpler than the current proposal and merits some attention. In fact, faced with this radically different alternative, empirical generalizations about the inner structure of determiners have to be formulated as hypotheses. To justify a segmentation approach, I need to point out some advantages of this method over the simpler alternative.

In my view, a segmentation approach as adopted here explains not only the following three individual properties in isolation but also relates them to one another in a systematic way:

- synchronic language-internal and crosslinguistic differences among determiners with respect to transparency of definiteness markers and inflections;
- diachronic relation between the old simple demonstrative and its contemporary derivatives;
- prediction and explanation of nonexistent determiner forms.

In addition, one of the interesting points raised in this paper is, I believe, the argument that closed-class elements such as determiners are very similar morphosyntactically to open-class items such as adjectives (Klinge 2008, Leu 2008). In other words, the commonalities between

these two types of lexical classes are taken as systematic here. I believe that treating all of these elements in the same way simplifies the linguistic system as a whole. In contrast, simple memorization relegates these common properties to mere accidental facts.

Returning to partially and completely opaque determiner forms, it seems clear that a certain amount of information must be stored in the lexicon; that is, it must be memorized by the speaker of the language. This paper is an attempt to minimize that amount by proposing that all determiners have the same underlying syntax, and that they only differ on the surface. Specifically, I claim that complete transparency of the determiners may be "masked" by postsyntactic operations that bring about the irregular forms. One immediate advantage is that all these determiners—be they transparent or opaque—can undergo exactly the same syntactic processes (for example, enter into agreement relations). As such, I believe that the issues raised and resolved by this type of approach represent a major advantage over the simple memorization approach (see also the literature discussed in section 2).

To sum up the introduction, first I provided the basic empirical and theoretical claims that are the focus of this paper; then I briefly sketched my proposal and, finally, pointed out some advantages of a segmentation approach over simple memorization. The remainder of the paper has the following structure. Section 2 discusses some previous proposals pointing out their virtues and shortcomings. In section 3, I strengthen the first hypothesis by extending it to all the Germanic languages. On this empirical basis, I lay out my own proposal in greater detail. Section 4 discusses the diachronic relation among definite determiners. In section 5, I discuss accidental and systematic gaps in the data. Section 6 is dedicated to the extension of the current proposal to other determiners. Concluding remarks are offered in section 7.

2. Previous Proposals.

I start with some general remarks. It is a widespread intuition that definite determiners have inner structure. However, as far as I know, most of the work on determiners has focused on the synchronic discussion of the transparent vocabulary items. Non-*d*-stems and/or determiners with irregular endings have received comparatively little attention. Similarly, crosslinguistic differences with respect to trans-

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parency have not been discussed in much detail (for some typological work, see Diessel 1999).

Faced with this situation and to keep repetition to a minimum, I focus in this section on previous proposals about the inner structure of contemporary transparent determiners in Germanic. This discussion lays the foundation for my own proposal in section 3. I begin by briefly discussing eight proposals (see also references cited therein; for a general survey, see Alexiadou et al. 2007). After these preliminary remarks, I review Klinge 2008, Leu 2008, and Roehrs 2010 in more detail.

In section 4, I discuss previous proposals on diachronic aspects concentrating on van Gelderen 2007, 2011, where the emergence of definite articles is discussed, and Haspelmath 1993, where the development of complex demonstratives is addressed. Note that I am not aware of any detailed discussions in the literature about possible versus impossible determiner forms, the topic of section 5. Finally, I discuss Wiltschko 1998 in section 6, where differences between *d*-pronouns and personal pronouns are analyzed.

2.1. Basic Discussions of Determiners.

Authors vary in the range and depth of their remarks on determiners. Some authors seem to restrict their attention to the structure of definite determiners. For instance, Vater (1984:21, note 3) states that it is possible to analyze definite articles in German as involving a root morpheme and an inflectional morpheme (*d-er*). Similarly, Katzir (2011) proposes for Danish *den* that the *d-* is presumably a dummy and *-en* is a licensor for a definiteness feature. Chomsky (1995:338) suggests that English demonstratives are presumably complex elements, with *th* representing D (as in *the* and *there*) and the remaining part possibly involving some kind of adjective. Similarly, den Dikken (2006:198) observes that demonstratives in Germanic are usually amalgams of the definite determiner in D and some deictic marker. Finally, Bernstein et al. (1999:500) propose that demonstratives in English in their definite interpretation consist of components involving definiteness (*the*), number, and deixis.

Interestingly, other proposals are wider in scope of their discussion of the relevant internal structures. Specifically, Bernstein (2008) discusses lexical elements such as *the*, *this*, *they*, and existential *there* arguing that the *th*-morpheme represents a 3rd person marker that is

unspecified for number and gender and that does not encode definiteness and deixis. Déchaine & Wiltschko (2002:422) treat *th* in words such as *the*, *this*, and *them* as a bound D-morpheme. Finally, Wiltschko (1998: 149) proposes that determiners in general can be analyzed as a bound morpheme that involves *d-* for definite determiners. This morpheme occupies D and takes AgrDP as its complement hosting the inflectional ending (see also section 6.2).

To be clear, all these authors suggest that definite determiners are complex elements with inner structure. However, they differ on a number of points, namely (i) what lexical items are involved or not (for example, personal pronouns, existential *there*) and in what languages, (ii) what exact form the initial element has (for example, *th* versus *the*), and (iii) what status the initial element has with regard to definiteness.

It is also interesting to point out that some of the above proposals are couched in rather cautious terms and provide no explicit discussion about the syntactic structures involved; that is, it remains unclear where the relevant elements are in the syntactic structure and how they combine to yield the relevant surface forms. To be fair, though, I hasten to add that not all proposals above set out to explain what I am interested in in this paper.

2.2. More Detailed Discussions of Determiners.

I turn to three recent proposals that discuss the decomposition of determiners in quite some detail: Klinge 2008, Leu 2008, and Roehrs 2010. As might be expected, these proposals also vary in (intended) empirical coverage. I dedicate most of the space to Leu's work, which is somewhat programmatic but has been quite influential.

Klinge (2008) discusses *þ*-related and *hw*-related elements in the history of the Germanic languages with special focus on German, English, and Danish. Illustrating his proposal with Modern German here, Klinge delineates four components for the demonstrative *dieses* 'this' in 16a. Specifically, the stem of the demonstrative consists of a *d*-root with a deictic feature (DEIC), an epenthetic vowel (V), and a proximal element (PROX). This complex stem combines with an inflectional ending (INFL), as in 16b.

(16) a. dieses (German)
this

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b. [d-ie-s-es]
DEIC-V-PROX-INFL

The distal demonstrative *das* 'that' is as follows:

(17) a. das
that

b. [d-(ə)-as]
DEIC-V-INFL

Klinge (2008:234–235) ties adverbial elements such as German *da* 'there' and *dann* 'then' to the demonstratives above by showing that the former can be given paraphrases involving the latter. All these indexical elements are contrasted with *w*-elements such as German *welcher* 'which', *wo* 'where', and *wann* 'where'. Klinge argues that *d*-related and *w*-related elements are determiners that involve the same makeup. The basic difference is as follows: *D*-related determiners indicate that the speaker has a specific entity in mind that the hearer is instructed to identify, whereas *w*-related elements contain a variable that the hearer is instructed to fill. Connecting all these elements in one account is a nice achievement.

Focusing on the demonstratives in 16 and 17, Klinge posits a maximum of four elements in the makeup of demonstratives. However, as far as I can tell, Klinge winds up with two different decompositions: In the parsing in 16b and 17b, there are differences in the epenthetic vowels, in the presence versus absence of a second deictic element, and in the shape of inflectional suffixes. As a result, the inventory of inflectional suffixes is increased to seven, where the two additional ones, *-as* and *-ie*, are restricted to simple demonstratives, as in 17a.

In my view, it would be more desirable to postulate the same number and types of components for both demonstratives and to keep the inflectional inventory the same. Also, it remains unclear how non-*d*-stems such as German *jen-* 'that', Yiddish *yen-* 'that', or Pennsylvania German *sell-* 'that' fit in. Finally, while Klinge (2008:245) provides the decompositions in 16b and 17b, he discusses neither the details of the internal structures nor how the individual segments combine. For Klinge, all determiners—including demonstratives—are under D.

Leu (2008) is more explicit about the morphosyntactic structure of determiners. Drawing a parallel to other complex projections, he provides a syntactic account of demonstratives. He proposes that these types of determiners involve extended adjectival projections (Dryer 1992:120–122; see Grimshaw 2005). Leu assumes that these elements consist of a—what he calls—definite marker *d-*, an adjectival agreement head (AgrA), and a demonstrative adjective at the bottom of the tree.[6] The example in 18a is analyzed as in 18b.

(18) a. den derre (Norwegian)
that there
'that'

b. [$_{xAP}$ d-AgrA derre]

The structure in 18b sits in Spec,DP. Cases where the demonstrative adjective does not surface are explained by the assumption that the moved demonstrative adjective remains unpronounced (see Kayne 2005). Nonpronunciation is marked by strikethrough. The derivation of 19a is shown in 19b.

(19) a. den
that

b. [$_{xAP}$ ~~derre~~$_i$ d-AgrA t_i]

Treating both demonstratives and adjectives in the same way affords Leu an account of the strong/weak alternation of adjective endings. Pointing out the well-known fact that the inflections on definite determiners and those on strong adjectives are the same, Leu proposes that AgrA hosts the strong inflection. Now, if *d-* is merged inside xAP, as in 18b, it precedes AgrA, and the determiner surfaces with the strong ending while the adjective has a weak ending. In contrast, if *d-* is not merged, then the

[6] Actually, to be precise, Leu (2008:79) later argues that the head noun is present in the adjectival structure and vacates this structure to surface in the matrix noun phrase. I abstract away from this additional structure and derivational component here.

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adjective moves in front of AgrA "picking up" the strong inflection. This is an elegant account of the identical inflections on determiners and adjectives. Later in his discussion, Leu extends this analysis to the interaction between complementizers such as *dass* 'that' and the position of finite verbs. Furthermore, Leu applies these adjectival structures to non-*d*-determiners such as *welch* 'which', *solch* 'such', *mein* 'my' and others. To sum up, abstracting away from movement, Leu postulates three syntactic components in the makeup of demonstratives.

Leu (2008) takes evidence for the higher position of the unpronounced demonstrative adjective in Norwegian in 19b from Afrikaans, which shows this distribution overtly. For instance, with the complex demonstrative *hierdie* 'this', the demonstrative adjective *hier* precedes the determiner *die* (I return to this example below). If I interpret Leu 2008:28 correctly, he claims that Norwegian differs from Afrikaans either with regard to crosslinguistic differences in the (non)pronunciation of demonstrative adjectives or with regard to the exact landing site of the demonstrative adjectives, which in turn regulates the actual pronunciation more generally. It should be mentioned that these two options are not discussed in much detail in Leu's work. It is instructive though to explore these two suggestions a little further here.

Starting with the pronunciation of the demonstrative adjective in Afrikaans versus its nonpronunciation in Norwegian, note that this dichotomy should ideally be tied to another property. A potentially relevant distinction can be identified in the different stress patterns of these complex demonstratives. To see this, notice first that noun phrases with an article have their nuclear stress on the noun, but noun phrases with a demonstrative are stressed on the determiner itself (for Afrikaans, see Ponelis 1993:168 and Donaldson 1994:491; for Yiddish, see Margolis 2011:122). Compare 20a,c to 20b,d.

(20) a. die mán (Afrikaans)
the man

b. dié man
this/that man

c. der mán (Yiddish)
the man

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d. dér man
this man

Now, as explicitly stated in Ponelis 1993:168, the Afrikaans demonstrative has stress on the adverbial element, as in 21a. In contrast, Weinreich (1999:191) and Schaechter (2003:58) point out that stress falls on the determiner in Yiddish, as shown in 21b.

(21) a. híerdie (Afrikaans)
here.this
'this'

b. ot dér (Yiddish)
here this
'this'

In other words, while Afrikaans *híerdie* seems to have compound stress, the Yiddish sequence *ot dér* does not. I believe that this makes it unlikely that *ot* and *dér* form a compound-like element in the latter language; that is, that *ot* is part of *dér*.[7] To drive this point home, note also that another element (*-o*) can optionally intervene between *ot* and *dér* yielding *oto dér* 'this'.[8] This then presents a clear difference between Afrikaans and

[7] Some remarks are in order here. There is a minor but irrelevant complication for 21b. As discussed in Jacobs 2005:146, Yiddish actually has two models to build compound structures: While the modifier precedes the head in the Germanic model, the modifier follows the head in the Hebrew model. These two models apply to elements independent of their etymology. Importantly, in each model, the modifier bears the stress. In view of the fact that *ot* by itself cannot function as the determiner, it is clear that *ot* is the modifying element and *dér* must then be the head. As *ot* is not stressed, *ot dér* is not a compound as stated in the main text.

[8] Both *ot* and *-o* are of Slavic origin (see Jacobs et al. 1994:405, also Dov-Ber Kerler, personal communication). Wiener (1893:66) states that *ot* is presumably an abbreviation of Russian *vot: vot etot tschelovjék* '(here) this person'. Notice that Russian *vot* can actually mean both 'here (is)' and 'there (is)'. In Yiddish, *ot* only seems to have the proximal meaning 'here' as in *ot iz er* 'here he is' (Weinreich 1999:186–187). Note that the status of Yiddish *-o* is not entirely

Yiddish. However, note that the preceding demonstrative adjective is pronounced in both languages, and that the different stress patterns cannot help explain the unpronounced demonstrative adjective in Norwegian.

As a second option to explain the difference in pronunciation of the demonstrative adjective, Leu suggests different landing sites for these elements. Note first that when regular adjectives move to pick up the strong inflection, *d-* is not merged; that is, *d-* is absent (for example, *guter* 'good'). In contrast, movement of the demonstrative adjective is not affected by the presence of *d-*. In fact, *d-* must be present: **hier-ie* and **ot-er* (note that the obligatory presence of *d-* has nothing to do with the semantics; see the discussion of preposition-article contractions in Leu 2008:28). One could interpret this difference in the presence versus absence of *d-* by claiming that demonstrative adjectives move higher than regular adjectives. In other words, there are at least two positions in front of AgrA.

Now, in order to explain the difference in pronunciation of the demonstrative adjective in Afrikaans versus Norwegian, one could suggest that Norwegian moves its demonstrative adjective to a third, even higher, landing site where nonpronunciation is licensed. As Leu (2007:147) tentatively suggests, this is perhaps so because the demonstrative adjective is at the edge of a phase in the sense of Chomsky 2000 and subsequent work. Taking stock of the discussion of this option, one winds up with three different landing sites for adjectives preceding AgrA. Consequently, the adjectival structure must involve a fairly complex left periphery for which no independent evidence is provided.

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clear. Besides the distribution mentioned in the text, Dov-Ber Kerler (personal communication) points out to me that *-o* can also appear in other positions:

(i) a. dér-o (Yiddish)
b. ot dér-o
c. ot-o dér-o
d. ot dér doziker-o
here this here-O

Given the current state of the investigation, it seems clear that *-o* attaches to an element on its left.

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To sum up, both accounts of the unpronounced demonstrative adjective in Norwegian are not without issue. At best, this state of affairs calls for further detailed investigation and ideally some empirical evidence to argue in favor of any one option. At worst, this casts doubt on Leu's proposal of demonstrative structures (for more critical discussion, see Roehrs 2010, section 2.1).[9] Finally, Leu does not discuss complex demonstratives, determiners involving the deictic element *-s-*, in much structural detail (for some brief remarks, see, for instance, Leu 2008:18, 32, 35–36). The internal structure of these demonstratives is of primary interest to me here.

Turning to the third proposal, Roehrs (2010) assumes a different internal structure of demonstratives. Illustrating the different components with German *dér* 'that' and *dieser* 'this', the deictic part of the demonstrative, null *+Ø-* and *+ies-*, projects a Deictic Phrase (DeicP) and the definite marker *d+* is housed in a Demonstrative Phrase (DemP). FP is an optional functional phrase projected when certain adverbial ele-ments are present. The structure in 22 is located in Spec,DP.

(22)

	[Dem	[F	[Deic]]]
dér 'that':	d+		+Ø-er
dieser 'this':	d+		+ies-er

Based on Brugè 1996 and Bernstein 1997, Roehrs 2010 provides a fairly comprehensive discussion of the different combinations of determiners and adverbial elements—the latter called REINFORCERS—in the Germanic and Romance languages (for discussion, see section 4.1). Identifying four different types of demonstrative-reinforcer construc-

[9] There are some other points worth mentioning. The account of the strong/weak alternation of adjectival inflection is appealing for German-type languages. However, I demonstrate in section 3 that not all languages have definite determiners and adjectives that share the same strong endings. Furthermore, the status of the weak adjective endings remains unclear, and Leu's proposal leads to some nonstandard consequences: The indefinite article is treated quite differently from the definite article (the former must be outside of the extended projection built by the adjective) and dative/genitive inflections are different from nominative/accusative ones. While certainly interesting (on these points, see also Klinge 2008 and Bayer et al. 2001), these consequences merit further investigation before they can be accepted.

tions, this paper connects the varying distributions of these types to the different determiner systems in the two language families. As a consequence, Roehrs 2010 provides good evidence that demonstratives are complex elements that can surface in different specifier positions in the larger noun phrase.

One nontrivial aspect of the morphosyntax of demonstratives that Roehrs' proposal does not address is the status of the inflectional morphology on the determiners in 22. It is important to discuss this type of element, since attributive adjectives such as *guter* 'good' have the same inflection. Not doing so misses an important generalization. Furthermore, demonstratives such as *jener* 'that' and other types of determiners were not discussed in much detail in that paper.

In the next section, I argue that the structure for the demonstratives in 22 is not quite accurate in two ways: First, it is not fine-grained enough to take the inflection on the demonstratives into consideration. Second, it postulates two phrases (DemP and FP) that are not well motivated. To be more specific, I argue below that the inflectional morphology on determiners involves a separate head in the syntax (Infl), and that the demonstrative stem involves just one head (Deic). I consider this in more detail below.

3. Synchronic Relatedness of Definite Determiners: A New Proposal. This paper focuses on the definiteness marker and the inflection of definite determiners. I begin by strengthening hypothesis 1 to cover all the Germanic languages. Next, I lay out the details of my proposal about the structure of determiners and the DP as a whole. Arguing for extended projections, the parallel structures of adjectives and determiners explain their inflectional similarities. In order to explain the related stem forms of determiners, I employ the well-established distinction between bound and free morphemes and extend it to determiners. Proposing that definiteness markers are support elements in all the Germanic languages, I account for the related stems by arguing that bound determiner morphemes are supported by definiteness markers. Before providing an interim summary, I propose that postsyntactic operations explain context-specific and paradigm-general exceptions.

3.1. Strengthening Hypothesis 1.
In the introduction, I briefly discussed the definite determiners in German, English, and Icelandic. In 23, I contrast these determiners with the adjective *lucky* in the relevant languages.

(23)	ART	DEM	DEM	ADJ	
a.	der	dieser	dér/jener	glücklicher	(German)
b.	the	this	that	lucky	(English)
c.	(h)-inn	þessi	sá/hinn	heppinn	(Icelandic)

As can be seen in 23a, German has three related determiners sharing the definiteness marker, and all the determiners have the same inflections as the adjective. In other words, the two elements under discussion occur in tandem allowing a transparent parse into separate components. This is summarized in 24a. However, I have also shown that definiteness markers and regular inflection can occur separately. English in 23b shows related determiners but irregular endings, and German *jener* 'that' in 23a shows that an unrelated determiner can have a regular inflection. This is summed up in 24bi. Finally, Icelandic *þessi* 'this' and *sá* 'that' in 23c illustrate that both the definiteness marker and regular inflection can be absent at the same time. This is stated in 24bii.

(24) *Hypothesis 1: Synchronic Relatedness of Definite Determiners*

a. Definite determiners are transparent with regard to the definiteness marker and the inflection.

b. Definite determiners may also be partially or completely opaque:

(i) Partial opacity: determiners do not share either the definiteness marker or the inflection.

(ii) Complete opacity: determiners share neither the definiteness marker nor the inflection.

Now I cast the empirical net wider. The objective here is to determine if the initial juxtaposition of German, English, and Icelandic above is representative of all the Germanic languages. If so, one can strengthen this hypothesis. For that purpose, I have investigated the definite deter-

miners of twelve Germanic languages. First, I focus on the determiner stem forms.

The twelve Germanic languages investigated here are, in alphabetical order: Afrikaans (Af), Danish (Da), Dutch (Du), English (En), Frisian (Fr), German (Ge), Icelandic (Ic), Norwegian (No), Pennsylvania German (Penn. Ge), Swedish (Sw), West Jutlandic (W. Jutl), and Yiddish (Yi). Table 1 below provides an empirical overview of the determiner systems of these languages. The data are sorted by the type and number of determiners: The columns of the table are organized by the number and type of article, and the rows—by the number and type of demonstrative. Specifically, *d*-art and *h*-art stand for articles starting in *d*- and *h*-; *d*-dem and *h*-dem stand for demonstratives starting in these elements. These are the related stem forms of articles and demonstratives. Determiners without a *d*- or *h*- are unrelated and underlined. In the cells containing the concrete data, a dash separates the article from the demonstrative(s); commas separate proximal from distal demonstratives; slash signs separate different distal demonstratives.

To illustrate the presentation of the data in table 1 for one language, Icelandic is in column one and row four of the data cells. This language has four determiners: one article and three demonstratives, where one of the demonstratives is related to the article (both share *h*-). The other two demonstratives are unrelated and underlined. The article can be free-standing in preadjectival position in literary Icelandic (*hinn*) or suffixed to the head noun in common Icelandic (*-inn*). These two options are represented by putting the *h*- in parenthesis (the Mainland Scandinavian languages are different in this respect, see section 3.3).[10] Furthermore,

[10] For West Jutlandic, some remarks are in order. First, West Jutlandic is the only Scandinavian dialect that has a definite prenominal article when no modifier is present (*æ hus* 'the house', Delsing 1993:121). Perridon (1997, 2002) argues that this is not a borrowing from Low German. Second, nouns have no lexical gender, but a gender-like distinction is observable on both articles and demonstratives. Specifically, count nouns take determiners in the—what looks like—common gender, but mass nouns take determiners in the neuter gender (note that the latter forms are given in the literature as both *det* and *de*; see the discussion of Danish below). This is exemplified with the demonstrative in i (see Delsing 1993:229, Perridon 1997:361, 2002:1020; see also Julien 2005:65, note 22).

Icelandic has one proximal demonstrative (*þessi*) and two distal demonstratives (*sá, hinn*).[11]

Studying table 1, one can observe that all contemporary Germanic languages have at least one article and at least one demonstrative. In fact, it is striking that every member of this language family has at least one article and at least one demonstrative that share the definiteness marker. This marker is either a dental sound or *h-*, the latter only occurring as a definiteness marker in the Insular Scandinavian languages (note that the

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(i) a. den mand/hus (West Jutlandic)
that man /house

b. dét mælk
that milk

Third, there seems to be another semantic distinction. When an adjective is present, Delsing (1993:121, 123, 132) states that *æ* is used in well-known/nonrestrictive/deictic contexts and *det* is used in contrastive/restrictive/anaphoric contexts (see also Icelandic in this regard; Delsing 1993:132, Thráinsson 1994: 166, and Sigurðsson 2006:200). Note also that North Frisian determiners—what Longobardi (1994:657) calls A-articles and D-articles—seem to have different semantics.

While I cannot provide a full account of these intricate differences here, I assume that articles themselves have no semantics, but that they are inserted in certain featural contexts thereby making these morphosyntactic and semantic features visible. I return to this in more detail later in the main text.

[11] To save space, only the nominative case forms are provided for German, Icelandic, and Yiddish (Pennsylvania German used by sectarian speakers does not distinguish case on its determiners anymore and is thus like the remaining eight languages). In fact, different morphological cases are only discussed when relevant. Furthermore, none of the plural forms are given here. Finally, as is well known, the gender systems of these languages vary considerably: if a cell in the table has three lines, the relevant language has three genders where the first line is masculine, followed by feminine and neuter; if a cell has two lines, the language has two genders where the first line is common gender followed by neuter; if a cell has only one line, the language has no grammatical gender. West Jutlandic has some special properties (see above). For more detailed information on all these languages, see König & van der Auwera 1994, where most of the data are taken from.

Dutch article *het* is an isolated form).[12] In other words, all Germanic languages have related determiner stems. This means that the above-mentioned fact is not accidental and should be taken seriously.

demonstratives: one or more	articles: one or two	
	d-art or *h*-art	*d*-art, art
d-dem	die - dié (Af)	æ - den (W. Jutl) det - dét
d-dem dem	der - dér, yener (Yi) di - dí, yene dos - dós, yents	der - dér, seller (Penn. Ge) di - dí, selli es - des, sell
d-dem *d*-dem	(d-)en - denne, dén (Da, No) (d-)et - dette, dét	de - deze, die (Du) het - dit, dat
	(d-)en - denna, dén (Sw) (d-)et - detta, dét	de - dizze, dy (Fr) it - dit, dat
	the - this, that (En)	
h-dem dem dem	(h)-inn - þessi, sá/hinn (Ic) (h)-in - þessi, sú/hin (h)-ið - þetta, það/hitt	
d-dem *d*-dem dem	der - dieser, dér/jener (Ge) die - diese, díe/jene das - dieses, dás/jenes	

Table 1. Definite determiners in Germanic.

[12] In two respects, the Germanic languages have one interesting outlier: On the one hand, Faroese has four demonstratives; on the other, this language has two related articles where one, *(h-)in*, is related to three of the demonstratives (data taken from Lockwood 1955:71):

(i) tann, (h-)in – hesin, hasin / tann / hin (Faroese)
the, the this, that /that / that

Although I have not investigated Faroese in detail, I simply assume that it patterns with Icelandic (as is often done). I would like to point out though that the inflections on *hin* and adjectives ending in *-in* do not seem to be completely identical. If the latter difference cannot be given a phonological explanation, then one has to group Faroese with English (and not German) in terms of its inflections.

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There is one minor qualification to this general statement. Languages such as German have a second demonstrative element that is not related to the article (*jener* 'that' versus *der* 'the'), and languages such as Dutch have a second article that is not related to the demonstrative elements (*het* 'the' versus *dit* 'this'). In fact, there is a third type of language, Pennsylvania German, that combines the general patterns of German and Dutch. Specifically, this language has related articles and demonstratives but also an unrelated article (*es*) and unrelated demonstratives (*sell-*). This means that there is no connection between the presence of an unrelated article and the presence of an unrelated demonstrative. To be clear, though, with the exception of a few determiner forms, all Germanic languages have related definite determiners.[13]

(25) *Hypothesis 1a more generally*

> All contemporary Germanic languages have at least one article and at least one demonstrative that share the definiteness marker. In addition, these languages may have an unrelated article, or an unrelated demonstrative/demonstratives, or both at the same time.

Note that while this hypothesis may not be very revealing if one only considers the Germanic languages, it becomes more important once other languages are taken into account.

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[13] There is another interesting observation:

(i) The Germanic languages vary in the number of articles and/or demonstratives they make available.

While I have not investigated this in detail, the number of determiners might ultimately have to do with the organization and structure of the larger deictic system (including adverbials) in the respective languages, that is, with the presence versus absence of other indexical elements. That the presence of certain deictic elements might play a role seems to be indicated by the fact that simple demonstratives are deictically proximal in Yiddish and Pennsylvania German, distal in German and the Scandinavian languages, and unspecified in Afrikaans. To speculate, one might state that the presence or absence of certain demonstratives has an impact on the deictic value of the simple demonstratives. The detailed investigation of these types of language-specific differences goes beyond the scope of the current paper.

Consider some of the Romance languages. While there are many interesting points to observe, it is particularly striking that the Romance articles are not related to their demonstratives in any obvious way (see also Kayne & Pollock 2010; Roehrs 2010:238, a response to a reviewer's comment):[14]

(26)

	ART	DEM	DEM	
a.	el	este	ese/aquel	(Spanish)
	la	esta	esa/aquella	
b.	o	este	esse/aquele	(Portuguese)
	a	esta	essa/aquela	
c.	-ul	acest	acel	(Romanian)
	-a	această	acea	
d.	le	ce (…-ci/-là)		(French)
	la	cette (…-ci/-là)		
e.	il	questo	quel	(Italian)
	la	questa	quella	
f.	su	kustu	kussu/kuddu	(Sardinian)
	sa	kusta	kussa/kudda	

I take this difference between the Germanic and Romance languages to be significant. In other words, I claim that transparency in definite determiner stems is another typological difference that sets Germanic apart from Romance. I interpret this common trait in Germanic such that the article and the demonstrative are morphosyntactically related. While I provide a fairly comprehensive treatment of the contemporary Germanic languages, I only briefly comment on the Romance languages restricting most comments to Spanish and Sardinian. Next, I turn to the inflections on determiners.

[14] Masculine forms are given in the first row, followed by the feminine. Some languages have neuter forms, which are special (see note 67). For more details, see Harris & Vincent 1988, where the data are taken from.

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As just discussed, determiners can be grouped with regard to their initial element, the definiteness marker. However, they can also be classified in terms of the regularity of their endings. I define regularity of inflection as follows: If a determiner has the same inflection as an adjective, then the inflection on the determiner is regular. Before classifying the determiner systems in terms of their inflections, I need to make some general remarks about inflections on adjectives.

As is well known, the Germanic languages have two types of adjectival inflections, traditionally called WEAK and STRONG. Weak endings are fewer in number making fewer overt distinctions than their strong counterparts. The stereotypical distribution is that weak inflections occur on adjectives following definite articles, as in 27a, and strong inflections surface on adjectives occurring with indefinite articles, as in 27b.

(27) a. der nette Student (German)
the nice-WK student

b. ein netter Student
a nice-ST student

All Germanic languages exhibit this pattern, except for English, which does not have adjective endings anymore, and Afrikaans, which is special (see section 3.4). With these general remarks in place, it is important to decide which of the two inflections, weak or strong, is relevant for classifying the determiners. To make an informed decision, I consult some recent work on this topic.

Leu 2008 and Schoorlemmer 2009 provide uniform accounts for the strong/weak alternation of adjective inflections across the Germanic languages. As discussed in section 2.2, Leu (2008) proposes that under certain conditions, adjectives move to "pick up" the strong inflection. Schoorlemmer (2009) provides an Agree-based account. To be clear, each author argues for one basic mechanism held accountable for the alternation.

Based on Harbert 2007:135, Roehrs & Julien (2012) have recently challenged the view that the Germanic languages can be given a uniform analysis. Discussing nine definite contexts, Roehrs & Julien (2012) demonstrate that German consistently shows a strong ending, and

Norwegian—a weak ending. They conclude that German is lexico-structural in nature, but Norwegian involves the semantics.

To briefly illustrate, German allows a weak ending in an indefinite context, as in 28a, and a strong ending in vocatives, which are definite in interpretation, as in 28b.

(28) a. (so) mancher nette Student (German)
so some nice-WK student

b. Dummer Idiot!
stupid-ST idiot

Without going into too much detail here, weak endings in German are triggered by certain determiners in a regular DP structure. Specifically, the example in 28a involves a regular structure and is explained if determiners are lexically marked to trigger a weak inflection on the adjective; 28b is accounted for if vocatives have a structure different from regular DPs, where a weak ending is not licensed. In contrast, Norwegian is semantic in nature (see Lohrmann 2011). If the noun phrase containing the adjective is definite in interpretation, the adjectival inflection is weak, as in 29a. However, lack of definiteness in the predicative use of the adjective brings about a strong ending, as in 29b.

(29) a. Dumme idiot! (Norwegian)
stupid-WK idiot

b. Huset er stort.
house-DEF is big-ST

To be clear, Roehrs & Julien (2012) argue for different language-specific mechanisms that bring about the weak adjective inflection; that is, weak inflections are subject to different language-specific conditions. These authors go on to claim that once these differing conditions for the weak inflections in German and Norwegian are identified, the distribution of the strong endings can be interpreted as the elsewhere case in both languages.

I assume that inflections spell out abstract features on terminal nodes. Recalling that the strong inflections have more diverse forms,

Roehrs & Julien (2012) state that they make more underlying features visible. While they undergo regular concord agreement in nominal features, strong endings are not subject to specific conditions but wear their underlying features on their sleeves. As such, I take the strong inflections on adjectives as the reference point when I determine the regularity of the inflection on determiners. With this in mind, one can distinguish three types of languages.

German and Yiddish belong to the first type. In these languages, definite determiners have the same inflections as adjectives (the Pennsylvania German determiner system is similar to Yiddish):

(30)

	ART	DEM	DEM				
a.	der	dieser	dér/jener:	ein	guter	Mann	(German)
				a	good	man	
b.	der	dér	yener:	a	guter	man	(Yiddish)
				a	good	man	

Returning to the Romance data set in 26 for a moment, note that Sardinian is the only language with regular inflection (see section 5.2).

The second type involves eight languages all showing—what I have called—irregular endings. These languages can be put in four subgroups, where the languages in parentheses behave in a similar way to the language preceding them: Danish (Norwegian, Swedish), Dutch (Frisian), English (Afrikaans), and West Jutlandic have the following patterns (31d is adopted from Julien 2002:265, where I added (') to the adjective, which represents a glottal stop; see Delsing 1993:230).

(31)

	ART	DEM	DEM				
a.	det	dette	dét:	et	stort	hus	(Danish)
				a	big	house	
b.	het	dit	dat:	een	mooi	huis	(Dutch)
				a	nice	house	
c.	the	this	that:	a	big	house	(English)
d.	æ	den:		en	ny'	hus	(West Jutlandic)
				a	new	house	

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To use one language for the purposes of illustration, the neuter article *det* and the distal demonstrative *dét* in Danish in 31a are pronounced without the final *-t* thus differing from the adjectival inflection.[15] I turn to the third language type and twelfth language in my data set.

At first glance, Icelandic determiners seem to pattern with the determiners in English-type languages in that they have different inflections from the adjectives, as shown in 32a. However, when one considers adjectives ending in *-in* (and most participles formed from strong verbs), then the homophonous article and demonstrative do pattern with the adjectives, as shown in 32b.[16]

(32)

	ART	DEM	DEM				
a.	(h)-inn	þessi	sá/hinn:	einn	ríkur	maður	(Icelandic)
				one	rich	man	
b.	(h)-inn	…	hinn:	einn	heppinn	maður	
				one	lucky	man	

[15] Furthermore, if the common article and distal demonstrative in this language are analyzed as *de-n*, then the latter have an inflection that is different from the adjective as well:

(i) den - denne, dén: en stor bil (Danish)
the this, that a big car

There is an alternative parse. One could suggest that this article and simple demonstrative have a null ending similar to the adjective. If this were true, then at least some determiner forms would have regular inflections in this language. However, recall that unlike German, adjective endings in the Mainland Scandinavian languages are sensitive to definiteness (Roehrs & Julien 2012). This means that this alternative parse faces a problem: An adjective ending that usually occurs in indefinite contexts would now also surface in a definite context (that is, on the definite determiners).

[16] Icelandic does not have an indefinite article, and I provide the relevant data using the singularity numeral. Furthermore, there is a difference in the article-demonstrative pair in the neuter nominative/accusative: *(h)-ið* versus *hitt* (see section 4.4 for a phonological explanation).

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To be clear, related determiners in this language have regular inflection, but unrelated ones do not.

In recent work, Katzir (2011:66) makes the convincing case that the different types of endings on the adjectives in 32a,b can be given a phonological explanation. Exemplifying with the masculine nominative singular forms, there are two (independently motivated) rules at play, where 33a applies before 33b.

(33) a. *r* -> *n* / *n*__
b. Ø -> *u* / C__*r*{C, #}

In more detail, the application of 33a to /*heppinr*/ will yield *heppinn* (and turns /*hinr*/ into *hinn*), and the application of 33b to /*ríkr*/ will yield *ríkur*.

More generally then, Icelandic is interesting in that the article *(h-)inn* and the demonstrative *hinn* share the same stem, and that they have the same inflections as adjectives.[17] At the same time, there are two types of demonstratives (*þessi*, *sá*) that have different stems and irregular endings. This makes Icelandic a "mixed" type of language: With one set of determiners, inflections are regular as in German, and with the remaining determiners, the endings are irregular as in English. Cross-linguistically, the West and North Germanic languages have determiners either with regular inflections (German, Icelandic) or with irregular endings (English, Icelandic). This is summed up as follows:

[17] Note that Katzir (2011) analyzes the free-standing article as *h-in*-inflection. This tripartite segmentation makes this element similar in structure to the demonstratives in the present proposal. Although the status of this element is, as he himself admits (p. 70), somewhat unclear, if it is indeed an article, the current proposal claims that it would have the structure *h*-inflection (where the inflection includes *-in*) or *hin*-inflection (where *-in* is part of the support element) given that articles project just one head in the syntax. Note in this regard that *-in* itself does not necessarily mark definiteness as it appears on adjectives ending in *-in*, which may appear in indefinite contexts. Furthermore, since the differences above are explained by phonological rules (without word-internal boundary symbols), there is no inherent claim there about the underlying syntactic structure of the determiners.

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(34) *Hypothesis 1b more generally*

> The contemporary Germanic languages differ in the way their definite determiners exhibit inflectional regularity. There are three cases: All the determiners in a language exhibit the same inflection as adjectives; none do; some determiners do, but others do not.

To sum up this subsection, I have provided a survey of definite determiners with regard to relatedness of stems and regularity of inflections strengthening the initial hypothesis to cover all the Germanic languages.

3.2. Internal Structure of Definite Determiners and DPs.
The main goal of this paper is to illuminate the nature of the definiteness marker and inflection with regard to syntax, and to identify some consequences for the DP as a whole. In the last subsection, I identifed individual components of the determiners and formulated hypotheses about their occurrence. With this in place, I can now proceed to the second step in the segmentation approach, namely, to matching these overt components with heads in the syntactic structure and determining the sequence of these heads.

More to the point, I interpret the components identified above as overt exponents of abstract features. I assume that these features project heads in the syntax. To be clear, matching the overt components with abstract features—and thus structure—yields the inner makeup of determiners. This allows me to develop an explicit and detailed analysis of the structure of determiners, in particular the definiteness marker and the inflection, compatible with general (minimal) structural assumptions in the literature.

Recall from the introduction that I assume that the definiteness marker enjoys a special status. Now, I provide evidence that the presence of this element cannot be used as a diagnostic for definiteness (Lyons 1999); that is, the presence of a definiteness marker does not entail a definite interpretation, and *vice versa*. I provide four pieces of evidence for each direction of a potential entailment relation. For ease of reference, I keep the traditional term for definiteness marker.

I start by pointing out that a definite interpretation of the nominal does not entail the presence of a definiteness marker. Recalling table 1, seven languages have unrelated definite determiner forms where the

article and/or the demonstrative do not start with the definiteness marker, as in 35a. Furthermore, personal pronouns lack this element, as in 35b. Third, proper names in many languages do not involve a definiteness marker at all, as shown in 35c. To give the last piece of evidence, Lyons (1999:15) points out that possessives and universal quantifiers are also definite elements, as in 35d.

(35) a. es /sell kind (Pennsylvania German)
the /that child

b. er, ihm; sie, ihr (German)
he, him; she, her

c. Peter, Mary (English)

d. mayn /yedes yingle (Yiddish)
my / each boy

In each of the cases in 35, the interpretation is definite, but there is no definiteness marker. In section 3.3, I return to this part of the discussion in the context of the suffixal article in the Scandinavian languages.

Conversely, and more importantly, the presence of the definiteness marker does not entail definite interpretation. First, Longobardi (1994) argues that definite articles preceding proper names are expletive elements, as in 36a; that is, they have no semantics of their own and are merged in definite contexts. Second, certain subordinating conjunctions, such as in 36b, that developed from the neuter form of the demonstrative (see van Gelderen 2011:259; also Diessel 1999:123), are often held to be devoid of definiteness semantics (for example, Lasnik & Uriagereka 1988:97, Paul et al. 1989:395, 438).[18] Third, there is evidence from English that even—what looks like—demonstratives can be used in inde-

[18] According to Schmidt et al. 2000:374, the different spellings in German of the demonstrative *das* and the complementizer *daß* (today often written as *dass*) originated in the 16th century. In fact, it seems that the demonstrative and the complementizer have slightly different pronunciations where the demonstrative (but not the complementizer) is stressed. This is particularly clear in English (see Lyons 1999:116).

finite contexts, as in 36c (Ionin 2006:179).[19] Finally, Bernstein (2008) argues for English that the definiteness marker does not indicate definiteness. This is particularly clear for existential *there* in 36c. In a similar vein and following the basic parsing in Klinge 2008:234, existential-*do* and a second adverbial *do* can appear in existential contexts in Yiddish (Kahn 2012:41, Zucker 1994:20), as shown in 36d.

(36) a. (der) Peter (German)
the Peter

b. Ich glaube, dass er schläft.
I believe that he sleep-3SG
'I believe that he is sleeping.'

c. There was this guy at the party. (English)

d. Es iz do a student do in klas. (Yiddish)
it is there a student here in class
'There is a student here in the class.'

In fact, the English translation in 36d clearly indicates that the definiteness marker on *there* cannot be tied to (distal) deixis either as this would lead to a semantic clash with the proximal adverbial *here* (see Hazout 2004:396).

To sum up, it is clear that the definiteness marker on the determiners does not bring about definiteness. In fact, with the possible exception of Afrikaans, there are at least eleven (out of the twelve) languages in table 1 that militate against the idea that definiteness markers are closely tied

[19] This instance of *this* is unstressed. Diessel (1999:109, 139) classifies it as an indefinite article that is specific and generally non-deictic. Interestingly, determiners in English provide more evidence that definiteness markers do not entail definiteness. For instance, note the (stressable) degree words *this* and *that* occurring in indefinite contexts (data taken from Alexiadou et al. 2007:108):

(i) I did not expect that big an audience.

Similarly, den Dikken (2005) analyzes *the* as a degree word in comparative correlative constructions in English such as *the older, the better*.

to definiteness semantics. It is clear, then, that *d* by itself cannot be responsible for definiteness (see also Leu 2010). Rather, I claim that the definiteness marker is a semantically vacuous element that performs a different task.

I propose that the definiteness marker does not point to syntactic structure (for now, I put the definiteness marker in parentheses, but I elaborate on its status in section 3.3). As such, articles only involve an inflection, and demonstratives only consist of an inflection and a deictic part. I assume that the inflection and the deictic part involve abstract features. I propose that the inflectional features involve a head in the syntax (I refer to it as Infl), and so does the deictic feature (I refer to it as Deic). I assume that the latter attracts stress. Locating the semantic and phonotactic properties on Deic captures the frequently expressed intuition noted in section 2 that the demonstrative consists of a definite article (here: Infl) and another element (here: Deic). Abstracting away from the definiteness marker, notice that there is a one-to-one match between the overt components and the abstract syntactic structure. To be clear, articles involve one head in the syntax, and demonstratives involve two. I can now update the main hypothesis from the introduction:

(37) *Hypothesis 3: Inner Makeup of Definite Determiners*

Articles only involve an inflection, which means they have one syntactic head: Infl.

Demonstratives only involve a deictic element and an inflection, which means they have two syntactic heads: Deic and Infl.

Having discussed the number of heads of determiners, I turn to the order of these heads in the syntax. I argue for extended projections where a head builds a complex projection, similar to 22 above. Unlike in 22, however, this complex projection is closed off by an inflectional phrase (InflP) at the top. For articles, the head of the projection is the head noun of the DP; for demonstrative, the head is the deictic part. Schematically, the two structural proposals are given in 38a and 38b.

(38) a. [Infl ... [N]]
der 'the': (d)-er

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b.		[Infl [Deic]]
	dér 'that':	-er (d)-Ø-
	dieser 'this':	-er (d)-ies-
	jener 'that':	-er jen-

Note that this proposal borrows ideas from Klinge 2008, Leu 2008, and Roehrs 2010. It is similar to Klinge in that I follow some of his assumptions about the morphological components of the demonstrative; it is related to Leu in that I assume an adjective-like extended projection of the demonstrative. Unlike Klinge, however, I propose that all demonstratives have a deictic element, and I depart from Leu (following Roehrs 2010) in assuming that the deictic part of the demonstrative (and not the adjectival element) is the head of the extended projection. An important consequence is that the structures in 38a,b are morphosyntactically the same. This makes the DP as a whole and its subparts uniform in structure. In the next part of this subsection, I provide more details and motivation for these structures. I begin by discussing the internal structure of demonstratives.

In section 3.1, I defined regularity in inflection with regard to adjectives. Determiners, adjectives, and quantifiers may take the same inflection (for reasons of space, I do not discuss quantifiers in much detail). In order to avoid issues with regard to the strong/weak alternation of adjective endings, I provide the relevant examples in the dative plural, where the strong and weak endings are identical:

(39) a.	mit	d-en	viel-en	klein-en	Kindern
	with	the-INFL	many-INFL	small-INFL	children

b.	mit	dies-en	viel-en	klein-en	Kindern
	with	these-INFL	many-INFL	small-INFL	children

Crucially, adjectives and demonstratives also share other properties. To begin with, note that modifiers have been used to explore the structure of their containing phrases (for example, for adjectives in the noun phrase, see Cinque 1994). Now, adjectives and demonstratives both allow modifiers: Adjectives take degree words (Corver 1997) and demonstratives take adverbial elements (Bernstein 1997). In more detail,

one can observe that the degree word for *enough* may either follow or precede the adjective. Contrast English with Yiddish:

(40) a. hot enough (English)
b. genug heys (Yiddish)
enough hot

Similarly, adverbial elements for *here* may either follow or precede the demonstrative:

(41) a. this here guy (English)
b. ot der yid (Yiddish)
here this guy

To be clear, with both the adjective and the demonstrative, the same modifying elements are in different positions in different languages. The same basic point can be made in another way, namely, lexically different modifiers can also occur in different positions in one and the same language. Compare 40a to 42a, where English modifiers can appear on either side of the adjective, and 41b to 42b, where Yiddish modifiers can surface on either side of the demonstrative.

(42) a. very hot (English)
b. der doziker yid (Yiddish)
this here guy

To sum up, modifying elements can be in different positions both cross-linguistically and language-internally.

In formal linguistics, differences in the syntactic distribution of elements are often captured by movement of these elements. If the same approach is applied to the combinations involving modifiers, then one can conclude that modifiers are part of a complex structure accommodating this displacement (I give the details of the syntactic interaction of demonstratives and adverbial elements in section 4.1). Now, given that the inflectional and distributional patterns are so similar, one can hypothesize that adjectives and demonstratives involve parallel structures (see Dryer 1992, Leu 2008, Roehrs 2010).

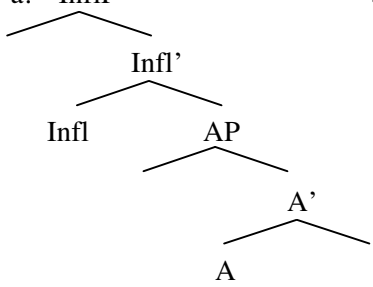
I propose that all elements in the noun phrase are split up into an inflectional ending and a stem (see Chomsky 1957 on verbal morphology; see Leu 2008 on the DP). In other words, the phrase projected by the stem has an inflectional phrase on top of it:

(43) [Infl [Stem]]

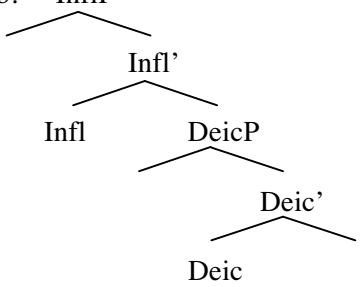
To provide a principled account for the sequence of these heads, I interpret the structure in 43 as an extended projection (Grimshaw 2005).

To make this idea more concrete, I follow Corver 1997 in that adjectives build up extended projections. To capture the commonalities between adjectives and demonstratives, I propose the same for demonstratives. Making minimal configurational assumptions, the adjective projects an Adjective Phrase (AP), and the demonstrative—a Deictic Phrase (DeicP). Both involve extended projections that are closed off by an Inflectional Phrase (InflP):[20]

(44) a.



b.



I assume here but argue in section 4.1 that Deic in 44b undergoes head movement to Infl:

[20] There are also some differences: As lexical elements, adjectives can assign theta roles and thus project arguments in the structure. This is not possible with nonlexical elements such as determiners. With this difference in mind, the claim here is that the two types of elements have structures that are similar at the bottom and at the top of the extended projection.

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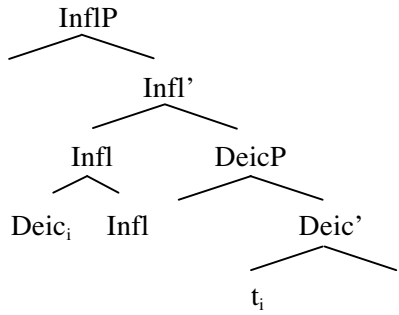
(45) *Demonstrative Structure after Head Movement*



Note that there are some immediate advantages to this parallelism. With a syntactically active component (Infl) and a component with semantic content (Deic) present, 44b accommodates both elements on minimal structural assumptions. Note that this avoids the proliferation of abstract functional structure not warranted by overt components. Furthermore, both structures have only one root element with semantic content (either A or Deic) that builds up the extended projection. In other words, if demonstratives involve extended projections, they have only one semantic component, and that component is at the bottom of the projection. Given this theoretical claim, one may expect demonstratives to behave similarly crosslinguistically.[21]

Finally, if the structures of adjectives and demonstratives are indeed similar, then the inflectional and distributional similarities discussed above are no longer coincidental but receive a principled account. This explains the regular inflections of demonstratives in hypothesis 1b in

[21] To be clear, though, there is no inherent claim here that the semantics of the Deic-head is crosslinguistically the same (Lyons 1999:107, Rijkhoff 2002:178). Interestingly, Diessel (1999:35) claims that there are two types of features with demonstratives: deictic and qualitative. He points out that the deictic features are primarily encoded on the root of the demonstratives. As to the qualitative features, they provide classificatory information about the referent (animacy, sex, etc.). These features are usually expressed by morphemes attached to the demonstrative root. I assume that qualitative features are captured by elements outside the demonstrative structure proper (see, for example, Kayne & Pollock 2010, who discuss silent nouns such as *thing* in the context of demonstratives).

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34.[22] Compared to demonstratives, definite articles lack a deictic element. I propose that they involve only an inflectional head in the syntax. Recalling the hypothesis that the definiteness marker is semantically vacuous, definite determiners per se cannot be responsible for definiteness.

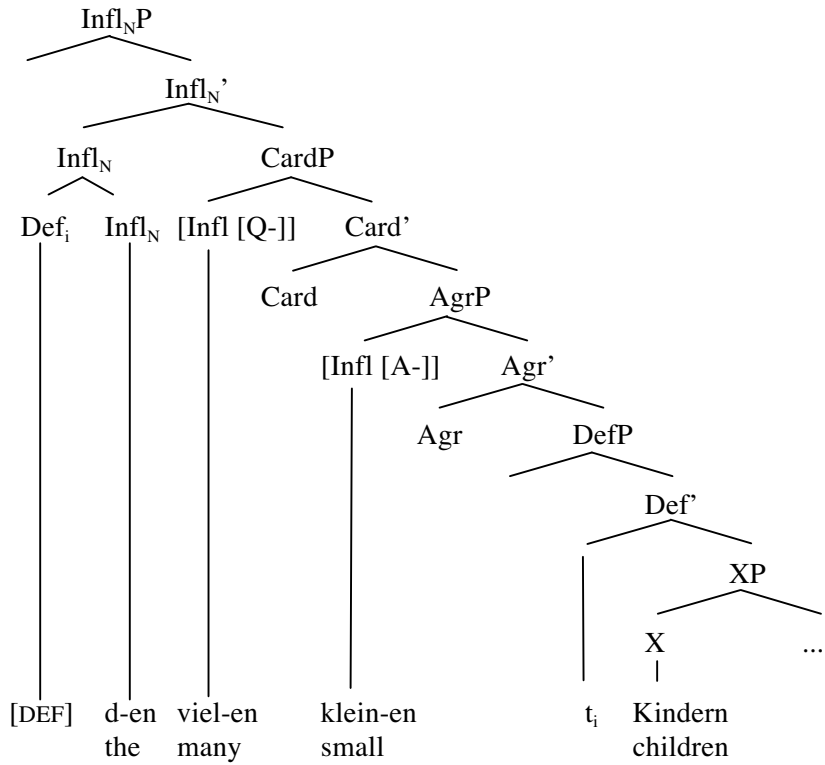
I propose that there is a feature in the syntax, [DEF], that determiners make visible. I follow Roehrs 2009 and Schoorlemmer 2012 in that this feature originates lower in the nominal structure and undergoes head movement to D. With certain assumptions, this explains the double definiteness in some of the Scandinavian languages, a pattern that shows the presence of two definite elements at the same time (among many others, Delsing 1993, Anderssen 2005, and Julien 2005). To make the proposed structure fully parallel to the structure in 43, I replace D, which traditionally stands for determiner (Abney 1987), with Infl_{N}. To avoid confusion, the diacritic $_{\text{N}}$ on Infl indicates that this inflectional head closes off the extended projection of the head noun. In other words, demonstratives and articles both involve extended projections but differ in the head of the projection (Deic versus N). On par with demonstratives, then, this explains the regular inflections on articles in hypothesis 1b. With this in place, I locate the different definite determiners inside the larger nominal structure.

Recalling the general structure in 43, I propose that adjectives and quantifiers are in specifier positions. Specifically, the quantifier structure is located in the specifier of a Cardinal Phrase (CardP), and the adjective structure is housed in the specifier of an Agreement Phrase (AgrP). Consider 46. The definiteness feature [DEF] originates in the head

[22] There are some other interesting points. Corver (2006:68) also puts the inflection in the highest head position of the extended projection of adjectives. He argues that, being in the highest position, the inflection is at the edge of a phase in the sense of Chomsky 2000 and can establish an agreement relation with the noun. This idea is generalized here such that all inflected elements involve extended projections that end in InflP. There are other promising applications of this idea. To name just one more, separating inflected elements into two heads (Infl, Stem) straightforwardly explains uninflected forms such as predicative adjectives (in West Germanic) or forms that are part of compounds by proposing that Infl is not present in these cases.

position of a Definiteness Phrase (DefP) and moves to adjoin to $Infl_N$.[23] Finally, the head noun is under XP at the bottom, which is fleshed out below (for more detailed discussion of the structure of the noun phrase, see Julien 2005, Roehrs 2009, and references cited therein). Recalling that stems move to pick up their inflection, the nominal in 39a is analyzed as follows:

(46) *Article and DP-structure*



Now I flesh out the XP at the bottom of the tree in 46. Since Abney 1987, most scholars take determiners to be part of the extended

[23] This phrase is called *n*P in Julien 2005 and Article Phrase (ArtP) in Roehrs 2009. In order to make the difference between article and definiteness clear, I renamed DP as $Infl_N$P, and ArtP as DefP.

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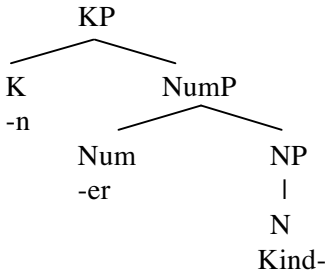
projection of the noun. What is interesting from the current perspective is that unlike the extended projection of demonstratives and adjectives, the extended projection of the noun has dual exponents where both the determiner and the head noun show inflections. Consider again the example in the dative plural shortened to *d-en Kind-er-n* 'to the children'. Importantly, though, these inflections are not identical. The head noun provides the gender feature, Num gives number, and K supplies case:

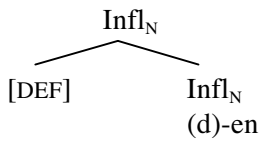
(47)



The head noun undergoes movement to Num and then to K resulting in *Kindern* 'children'. Returning to 46, XP stands for KP. Now, the first crucial difference between the inflection on $Infl_N$ and the inflections inside KP is that there is no overt marking for gender inside KP. Second, number and case involve two separate heads inside KP. Besides these structural differences, there is also a functional one. To use Corbett's (2006) terminology, note that the features inside KP are agreement controllers, while the features on $Infl_N$ are agreement targets. Now, since the features inside KP and the ones on $Infl_N$ are different in nature, this is not a case of true dual exponence after all, and two sets of inflections as part of the same extended projection are not unexpected.

Before I turn to the discussion of demonstratives inside the DP, I would like to be more specific about the interaction between the definite article and [DEF]. After head movement of [DEF] from Def to $Infl_N$ (formerly D), one obtains the following simplified adjunction structure:

(48)



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There are two elements in 48 that need licensing: [DEF] and the inflectional suffix.

With Longobardi 1994, I assume that definite DPs must be made overt, either in $Infl_N$ by the article or in Spec,$Infl_N$P by the demonstrative (see also Julien 2005, Roehrs 2009, among many others). In other words, an overt element inside $Infl_N$P licenses the presence of [DEF]. As to the inflectional suffix, these bound morphemes require a host (see Lasnik's 1981 Stranded Affix Filter). In section 3.3, I propose that similar to *do*-support in English, the definiteness marker is inserted to provide such a host for the inflection. Note now that the inflection supported by the definiteness marker makes $Infl_N$P overt and thus licenses [DEF] at the same time. I show below that providing a host for the inflection and making [DEF] visible coincide in most of the languages (one exception is English, see section 3.4). I return to the main line of argumentation.

Unlike articles, demonstratives involve two heads. As phrases, I locate them in Spec,$Infl_N$P. The example in 39b is analyzed as 49 (see below). With the demonstrative present, the definiteness feature is made visible. I propose that the presence of an element in Spec,$Infl_N$P licenses the non-pronunciation of $Infl_N$ (nonpronunciation is marked by strike-through).[24]

Some remarks are in order here. The reason why the demonstrative (but not the article) is pronounced presumably has to do with the fact that the demonstrative comprises all the features of the article. As such, the deletion of the article can be recovered when the demonstrative is present but not *vice versa*. Furthermore, putting the demonstrative structure InflP in a specifier position of the matrix noun phrase is fully compatible with Cinque 1994, 2010, where it is argued that adjectives are specifiers as well. Moreover, there is evidence that the demonstrative and the article are indeed in different positions.

[24] Note that this structure is fully compatible with the proposals in Giusti 1997 or Roehrs 2010 that the demonstrative moves from a lower position to Spec,$Infl_N$P.

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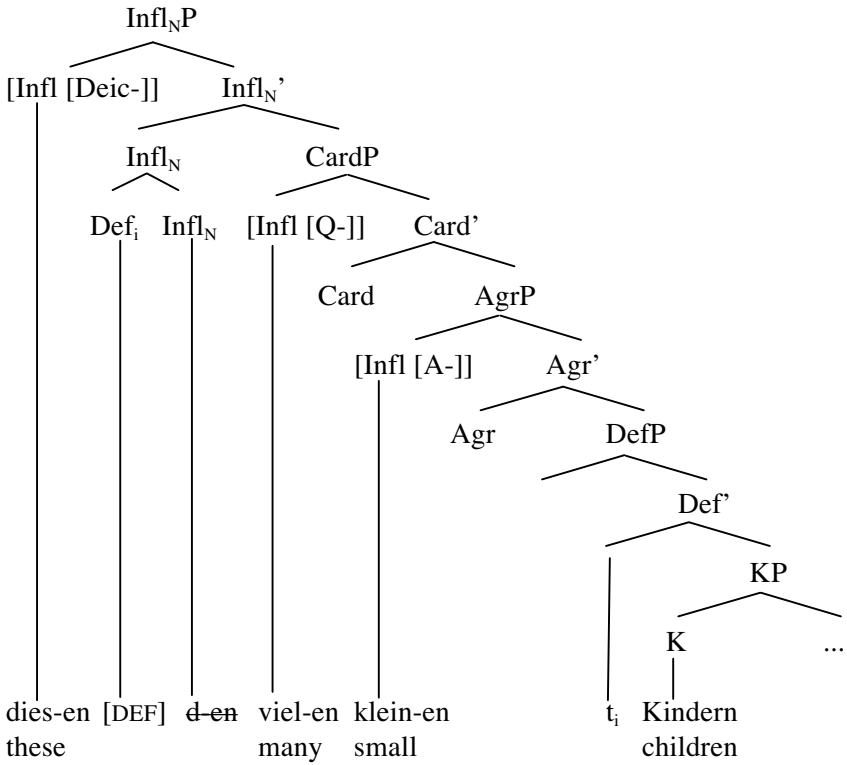
(49) *Demonstrative and DP-structure*



Conditions on the licensing of the nonpronunciation of overt material vary crosslinguistically. For instance, the Doubly Filled COMP Filter originally formulated by Chomsky & Lasnik (1977) has been shown to hold in some languages only. Specifically, Haegeman (1994:382–384) provides a number of examples where the fronted question word and the complementizer can both surface at the same time. In view of the often-claimed parallelism between the sentence and the noun phrase (for instance, Abney 1987), one might expect that both the demonstrative and the definite article can be spelled out too (Giusti 1997:109). While not possible in West Germanic, a doubly filled Infl$_N$P can be found in all the major North Germanic languages. This is exemplified here with Norwegian (see Roehrs 2010:236; 50a is adopted with a slight modification

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from Julien 2005:109). Importantly, none of the Germanic languages allows a definite article to precede a demonstrative, as in 50b.

(50) a. desse dei to eldste husa (Norwegian)
these the two oldest house-PL.DEF

b. *ART DEM… (all Germanic languages)

The general absence of the pattern in 50b follows from the structure in 49, where the demonstrative is in the specifier position and the article is in the head position of the same phrase (that is, Infl_NP).

To give a second piece of evidence in favor of the different positions of definite determiners, Giusti (1996:107) points out for Italian that extraction from a DP involving a definite article, as in 51b, is fine, but not when a demonstrative is present, as in 51c. The example in 51a shows the basic structure.

(51) a. Conosco il presidente di questa associazione. (Italian)
know-1SG the president of this association
'I know the president of this association.'

b. Di che associazione conosci il presidente?
of which association know-2SG the president
'Do you know the president of which association?'

c. *Di che associazione conosci questo presidente?
of which association know-2SG this president

Note that both DPs are definite in interpretation, the crucial difference being the presence of the article versus the demonstrative. I follow Giusti 1996 in that Spec,DP (here: Spec,Infl_NP) is an escape hatch for *wh*-movement. Locating the demonstrative in this specifier position blocks movement in 51c. In contrast, the article is in a head position and does not block this movement in 51b. I take this as evidence that the structure in 49 is on the right track. In the next subsections, I employ these structural assumptions to account for the bulk of the data.

3.3. Hypothesis 1a: Related and Unrelated Stem Forms.
The account of related versus unrelated determiner forms consists of two parts that work in tandem: the special status of the definiteness marker and the dichotomy of bound and free morphemes. To make a stronger case for the special status of the definiteness marker, I first lay the relevant groundwork by discussing bound and free morphemes. After detailing my assumptions about the definiteness marker, I discuss some isolated exceptions.

As stated in hypothesis 1a in 25, all Germanic languages have related articles and demonstratives. In addition, some languages have a few unrelated determiner forms. I illustrate this again with examples from Pennsylvania German and Icelandic, where the former are separated by semicolon from the latter. Related determiners are provided in 52a, and unrelated forms in 52b.

(52) a. der, dér; (h)-inn, hinn (Pennsylvania German; Icelandic)
the, this; the, that

b. seller; sá
that; that

There is a well-known dichotomy between free and bound morphemes (for example, Matthews 1991:210). For current purposes, this can be exemplified with spatial expressions in German, where adjectives derived from nouns can be free, as in 53a, or bound, as in 53b.

(53) a. die Mitte, mittig (German)
the middle, central

b. die Seite, *seitig, nordseitig
the side, -sided, north.sided

In what follows, I propose to extend this well-established dichotomy to the determiner system in Germanic. Returning to Pennsylvania German and Icelandic, I propose that determiners can involve free morphemes, as in 54a, and bound morphemes, as in 54b (for English, see Kayne & Pollock 2010).

(54) a. sell-; sá (Pennsylvania German; Icelandic)
that; that

b. -er, -ér; -inn
the, this; the/that

Unlike free morphemes, their bound counterparts are in need of another element on their left side, the definiteness marker *d* in Pennsylvania German or the definiteness marker *h* in Icelandic. Note also that another element can, at least with some forms, be added to the right of free morphemes, as in 55a. This is usually not possible with bound morphemes such as inflections, as shown in 55b.

(55) a. seller, selldatt (Pennsylvania German)
that-INFL, that.there

a. jen(*er)seits, dies(*es)jährig (German)
beyond, this.year's

With this in place, I discuss my assumptions about vocabulary insertion.

To be inserted in the syntactic tree, a vocabulary item—a word or an affix—must contain a subset of the features of the terminal node (for example, Halle & Marantz 1993:122). Continuing with masculine forms from Pennsylvania German, I suggest the following vocabulary items for *seller* 'that' and *dér* 'this', where 56a,b yield the relevant stem forms, and 56c yields the inflection. The simplified feature specifications on the left define the featural context of the insertion of these vocabulary items under the relevant terminal nodes.

(56) a. [DIST] → sell-
b. [PROX] → no overt segment
c. [MASC] → -r

Note that the feature [PROX] in 56b has no overt vocabulary item. For convenience, this is indicated by Ø in this paper. Note though that demonstratives are typically stressed. I assume that the abstract deictic feature attracts stress. If so, then one can state that this segmentally unrealized deictic feature shows its existence in the phonology, where

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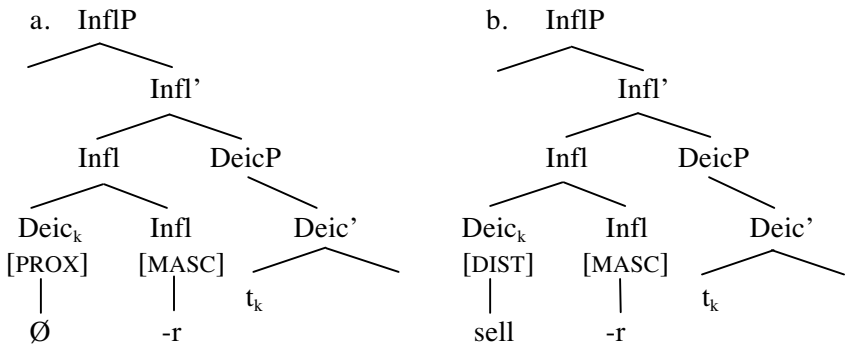
this particular demonstrative can be stressed once a vowel has been inserted. Note that this does not exclude the possibility that articles can also be stressed; for instance, English *the* can be pronounced as [ðiː] under certain conditions. As to 56c, I assume that this specification includes features for lexical contexts such that it is applicable to both determiner and adjective structures, but it cannot surface on the head noun itself.

Returning to the demonstrative structures from above, suppose that the Deic-head is specified as [PROX] in 57a and as [DIST] in 57b. The Infl-head is marked as [MASC] in both cases. Recall that Deic undergoes head movement to Infl. Given the feature specifications of the Deic-head, 56a can only be inserted in 57b, and 56b can only be inserted in 57a. As for the Infl-head, 56c is inserted in both.

(57) *Related and Unrelated Demonstratives*



The derivations for 57a,b are finalized below. Notice also that 56b does not "block" the insertion of other (overt) elements, as there is no other lexical item specified for [PROX] that is less specified than 56b itself. The vocabulary items in the other languages with homophonous demonstratives (Afrikaans, German, the Mainland Scandinavian languages, and Yiddish) can be represented in a similar fashion. To save space, I do not do this for all languages. Returning to 57, the same applies to Yiddish modulo some minor differences.

German is a bit more complicated. This language has three demonstratives, one proximal (*dieser*) and two distal (*dér*, *jener*). Since the distal demonstratives are very similar in their specifications, they are

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competing with one another for insertion. In order to account for the proper vocabulary insertion, I assume with Halle & Marantz 1993:122 that vocabulary items with more features matching those of the terminal node get inserted blocking the insertion of items with fewer matching features. Now, it seems that *jener* 'that' is typically used in discourse (but not situation) deixis.[25] I propose the following two vocabulary items for the distal demonstratives in 58a,b and provide the entry for the proximal demonstrative *dieser* in 58c.

(58) a. [DIST, DISCOURSE] → jen-
b. [DIST] → no overt segment
c. [PROX] → -ies-

The presence of the feature [DISCOURSE] under Deic allows the insertion of 58a blocking that of 58b.

I turn to the articles. Unlike demonstratives, articles involve only one head in syntax. Like demonstratives, I propose that they also involve bound and free morphemes. One can suggest then for Pennsylvania German that the masculine article *der* involves a bound morpheme, and

[25] This is a simplification. There seems to be some overlap in the use of the demonstratives. In fact, one often finds slightly different descriptions of the semantics of the simple demonstrative (*dér*) and the unrelated demonstrative (*jener*). It is my impression that *jener* 'that' is in the process of changing and so is the larger deictic system in German. Note in this respect that Lederer (1969: 236) states that *jener* seems to be restricted to formal and written language. It is interesting to point out though that if *jen-* occurs in combination with other elements such as a proximal demonstrative as in ia or as part of compounds as in ib, this demonstrative is not marked as formal.

(i) a. dieser and jener (German)
this and that
'some'

b. das Jenseits, jenseitig
the hereafter, beyond

I do not attempt to derive this minor difference here.

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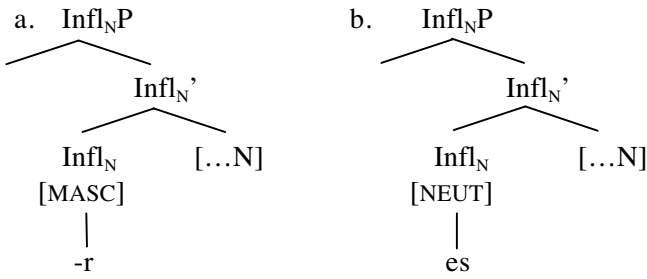
the neuter article *es* is a free form. After vocabulary insertion in $Infl_N$, one obtains the following:

(59) *Related and Unrelated Articles*



As a bound morpheme, the masculine article in 59a still requires a host, but its free neuter counterpart in 59b does not. More generally, I propose that all unrelated articles in table 1 (that is, Dutch *het*, Frisian *it*, West Jutlandic *æ*) are free morphemes with the same representation as in 59b.

To summarize, in order to capture the synchronic relatedness of determiner stem forms (hypothesis 1a), I proposed that determiners involve bound or free morphemes. As I show more clearly below, bound morphemes lead to related stem forms; free morphemes appear as unrelated determiners. To finalize the above derivations, two more steps are required: Bound morphemes must be supported by the definiteness marker and a vowel must be inserted in front of a consonantal inflection. This is what I turn to in the next part of this subsection.

Above, I argued that the definiteness marker has a different status. This element is semantically vacuous. I propose in more detail now that it is not an integrated part of definite determiners. Rather, the definiteness marker is inserted by a different mechanism. Similar to Last Resort operations such as *do*-support in English, this mechanism inserts the definiteness marker. I refer to this operation as D-SUPPORT. With *d*-support occurring postsyntactically, one can maintain that the demonstrative involves two and the article one syntactic head. Besides requiring minimal structural assumptions, this proposal also allows one to account

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for the related determiner forms in Germanic synchronically and diachronically.[26]

In more detail, I provided four pieces of evidence in section 3.2 that definiteness does not entail the presence of the definiteness marker. The same basic point can be made in a different way for the Scandinavian languages. Here the definiteness marker is not present under certain morphosyntactic conditions. Exemplifying with Danish, the unmodified noun has a suffixal article, but the modified one has a free-standing article. Compare 60a to 60b. Crucially, while both DPs are definite, only the noun phrase in 60b exhibits the definiteness marker:[27]

(60) a. hest-en (Danish)
horse-DEF
'the horse'

b. den røde hest
the red horse

This observation adds to the data that suggest a special status of the definiteness marker.

To account for Swedish data similar to 60, Santelmann (1993) proposes that under certain conditions, *den* in 60b is inserted in D to support the strong definiteness feature.[28] Pointing out some parallels to *do*-support in English, she interprets this as a Last Resort operation. She labels the operation *den*-support (see also Heck et al. 2008:229). Discussing parallel data, Embick & Noyer (2001:581–583), Roehrs (2006), and Schoorlemmer (2009:19, 28) propose that it is not the entire *den* that

[26] There might be another advantage. Preposition-article contractions in German seem to be transparent: *von* + *dem* > *vom* 'from the'. If so, then the Last Resort character of *d*-support allows one to assume that there is no deletion of *d*- in these cases as, for instance, van Riemsdijk (1998) does.

[27] I do not discuss in detail here why the article in certain noun phrases in the Scandinavian languages is suffixal (for some discussion, see Delsing 1993, Julien 2005, Roehrs 2009, Schoorlemmer 2012 and references cited therein).

[28] On p. 162, Santelmann uses the term *strong* in the sense of Chomsky 1995 and subsequent work. This sense of *strong* is not to be confused with the one in *the strong/weak alternation* (of adjectival endings).

is inserted but only the dummy part *d*, which supports a stranded affix. To reflect this difference, this operation is called *d*-support.

I follow the latter authors in claiming that *d* is inserted to support a bound morpheme. However, I show below that the inserted material can vary in size: It can consist of *d* only or of a combination of *d* and a vowel. I assume that both of these elements have no semantics. For simplicity, I continue using the name *d*-support. Now, if *d* is inserted late, then this implies that it does not project its own syntactic head. In other words, the definiteness marker is not structurally integrated with determiners but only linearly attached. While the definiteness marker has no semantics of its own, it is inserted in a featural context that includes a specification for definiteness (or perhaps 3rd person, as Bernstein 2008 claims for English). In what follows, I propose to extend *d*-support to the other Germanic languages. For this idea to be acceptable, I need to address some forms that do not seem straightforward. This is particularly relevant for German, Yiddish, and Pennsylvania German, all of which have regular inflections on their determiners.

Starting with German, I juxtapose the definite article, the three demonstratives, and an inflected adjective. Consider 61. Starting with the latter elements, the vocalic part of the inflection on the proximal demonstrative *dieser*, the distal demonstrative *jener* and the adjective *guter* 'good' is schwa.[29] In comparison, the definite article *der* and its demonstrative counterpart *dér* exhibit a number of irregular forms. These differences are particularly clear with the stressed and unreduced demonstratives. Specifically, the forms in 61a have an /e/-type sound. Depending on the following consonantal element, this vowel receives a slightly different pronunciation (for details, see Wiese 1988:34). More clearly and thus importantly, the feminine/plural nominative/accusative forms are special in that they have no independent inflection, as shown in 61b, and the neuter nominative/accusative instances show a different vowel following the dental element, as shown in 61c. Finally, notice that the vowel immediately following the definiteness marker of the proximal demonstrative *dies-* is uniformly pronounced as [iː].

[29] This is a simplification. I abstract away here from the vocalization of the inflection *-er* to [ɐ].

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(61)

	ART	DEM	DEM	DEM	ADJ	
a. MASC:	der	dér	d-ies-er	jen-er	gut-er	(German)
b. FEM/PL:	die[di]	díe[di:]	d-ies-e	jen-e	gut-e	
c. NEUT:	das	dás	d-ies-es	jen-es	gut-es	

In order to explain the different vocalic components in the definite article and simple demonstrative versus the remaining elements, I need to be more precise about the actual process of *d*-support. I follow the basic system laid out in Roehrs 2009:132. In particular, I suggest that German does not simply have support by *d*; rather, it inserts the dental element along with a certain vowel depending on the featural context. The following different forms of the definiteness marker are ordered according to the specificity of their insertion context:[30]

(62) d-*Support in German*

da / _ -[NOM/ACC, NEUT], [DEF]
di / _ -[NOM/ACC, FEM/PL], [DEF]
de / _ -, [DEF]

To be clear, the vowel following *d* is not an epenthetic vowel but part of the support element itself. Furthermore, the distribution of the forms in 62 is not the result of a morphosyntactic agreement relation between elements in the syntax. Rather, the insertion of these forms is sensitive to syntactic and semantic features.[31] This is consistent with the above claim

[30] These featural contexts involve [DEF]. This is a simplification. In order to allow *d*-support in contexts such as 36b-d, these featural contexts need to be refined. One way to make this more concrete is by assuming that definiteness is not a primitive but a complex category that can be broken down into several components, and that *d*-support is only sensitive to some of these components.

[31] If the feature [DEF] is absent, then the inflection is supported by *ein* 'a' (see section 6.1). Also, recall that the Insular Scandinavian languages, Icelandic and Faroese, involve related determiners beginning in *h*. Although *h*-articles and *h*-demonstratives may not be diachronically related (see section 4.4), one can still claim that in the contemporary grammar, Icelandic has *h*-support and Faroese has both *d*- and *h*-support (see note 12). Again, I assume that support elements are sensitive to their context of insertion.

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that the definiteness marker does not involve definiteness itself. To sum up this far, the definiteness marker is postsyntactically inserted in certain featural contexts. *D*-support is a Last Resort operation that provides an overt host for inflectional suffixes making the [DEF] feature visible.

The forms of the article are straightforward. After vocabulary insertion, the inflection under Infl_N is supported by the relevant *d*-vowel combination, as shown in 63a–c, with the minor adjustment that the schwa-inflection in the feminine/plural receives no independent realization, as shown in 63b. The related simple demonstratives are exemplified by the masculine form in 63d.

(63)	Vocab. Ins.	Support	Final Form
a.	-r	de-r	der
b.	-e	di-e	[di]
c.	-s	da-s	das
d.	-Ø-r	de-Ø-r	dér

Now I turn to the complex demonstrative. After vocabulary insertion and *d*-support, there are two more steps. First, I assume that the vowel before the consonantal inflection in 64a,c is due to schwa-epenthesis, similar to ordinary adjectives such as *guter* 'good'. Second, recall that the stem vowel of the proximal demonstrative stem *-ies-* is uniformly pronounced as [i:]. This contrasts with some of the vowels in the support elements. In order to avoid a hiatus, one vowel is deleted.[32] Assuming that semantic information cannot be lost in the course of the derivation, the proper deletion of the vowel follows from the assumption that the vowel on the (dummy) definiteness marker in 62 is not associated with semantics, but the one in the deictic component *-ies-* is. In other words, only the vowel of the support element can be deleted. This yields the correct final forms:

(64)	Vocab. Ins.	Support	schwa-epenth.	Vowel del.	Final Form
a.	-ies-r	de-ies-r	de-ies-er	d~~e~~-ies-er	dieser
b.	-ies-e	di-ies-e	-	d~~i~~-ies-e	diese
c.	-ies-s	da-ies-s	da-ies-es	d~~a~~-ies-es	dieses

[32] I thank Tracy A. Hall for discussion on this point.

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Finally, the distal demonstrative *jener* involves a free stem morpheme and does not undergo *d*-support. The discussion can be extended to Yiddish and Pennsylvania German. I show that these languages have slightly different types of *d*-support.[33]

As in German, the masculine determiner forms in Yiddish and Pennsylvania German are regular. Putting aside differences in spelling, the feminine/plural definite articles and simple demonstratives in these languages are also the same as in German. Consider 65a,b and 66a,b. However, there are also some differences. Recall that the regularity of inflection is determined by comparing the endings on the determiners to the strong endings on the adjectives. Taking the inflections on the adjectives into account, Yiddish patterns with German, as shown in 65b, but Pennsylvania German has the ending *-i* on the distal demonstrative *sell-* and on the feminine adjective as well, as shown in 66b.

(65)

	ART	DEM	DEM	ADJ	
a. MASC:	der	dér	yen-er	gut-er	(Yiddish)
b. FEM/PL:	di	dí	yen-e	gut-e	
c. NEUT:	dos	dós	yen-ts	gut(-s)	

(66)

	ART	DEM	DEM	ADJ	
a. MASC:	der	dér	sell-er	gut-er	(Pennsylvania German)
b. FEM/PL:	di	dí	sell-i	gut-$i_{[FEM]}$/-$e_{[PL]}$	
c. NEUT:	es	des	sell	gut(-es)	

Interestingly, there is a second feature according to which the three languages fall into two groups. Whereas German and Yiddish have a third form of the definite article and simple demonstrative in the neuter,

[33] Note in passing that closely related German, Yiddish, and Pennsylvania German also differ in their case systems. According to Jacobs 2005, Yiddish does not have true morphological genitive case. As for Pennsylvania German, sectarian speakers under the age of 60 only have a single, common case (this information goes back to van Ness 1994). Presumably, speakers of that group can now be as old as 75 years or so. This puts most contemporary sectarian speakers of Pennsylvania German on par with English in that it makes no case distinction on the article.

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as in 65c, their counterparts in Pennsylvania German exhibit the same type of vowel as in the masculine nominative, as in 66c.[34]

I propose that like German, Yiddish has three support forms. However, there is one minor difference between these two languages: While the distribution of the endings in the masculine and neuter in Yiddish is essentially like the one in German, Yiddish *di* is inserted not only in the nominative/accusative feminine/plural but also in the dative plural. This means that the conditions for *d*-support in Yiddish are different from those in German. In this regard, note also that the strong ending in the dative plural in Yiddish is *-e* (and not *-en* as in German). This makes the ending *-e* the same as in the nominative/accusative feminine/plural. In other words, *di* and strong *-e* have the same distribution in Yiddish.

I tentatively suggest that the insertion conditions in Yiddish can be stated in terms of the following inflection (and not in terms of features as in German). Consider 67. Note that this is consistent with the assumption that insertion of vocabulary—including inflections—precedes *d*-support. Also, as in German, when *di* is inserted before *-e*, the determiner is pronounced as [di(:)]. In contrast, Pennsylvania German has a simpler support inventory. Putting the ending *-e* on the plural adjective aside for a moment, I propose that *-i* is a regular inflection in the feminine and plural. It can be stated then that bound morphemes are uniformly supported by a sole *d* in the latter language:

(67) d-*Support in:*	Yiddish	Pennsylvania German
	di / _-e, [DEF]	d / _-, [DEF]
	do / _-s, [DEF]	
	de / _-, [DEF]	

It can be seen now that the three languages with regular inflections on their determiners have slightly different rules for *d*-support.

This concludes the discussion of the derivations begun earlier in this subsection. Specifically, bound morphemes supported by the definiteness marker account for the relatedness of the determiner stem forms. This accounts for the related forms in hypothesis 1a. The unrelated forms

[34] Both Yiddish and Pennsylvania German also exhibit some irregularities with regard to the consonantal inflections on the distal demonstratives (*yen-*, *sell-*) and the adjectives (see below).

were accounted for by the insertion of free morphemes. In the next part of this subsection, I take up the discussion of the few isolated exceptions left open above.

Languages with regular inflections provide clear evidence for the presence of features for gender and number and, in some instances, also case. As pointed out above, there is a small number of unsystematic exceptions. What I mean by that is that given a regular inflectional system, these exceptions involve unexpected forms that surface in isolated, specific contexts. In other words, they appear only in certain combinations of gender, number, and case. As such, they are few in number and do not appear throughout the entire inflectional paradigm. Nonetheless, I believe they deserve attention because they reveal some interesting properties, especially in the neuter gender.

I assume that structures are assembled in the syntax, with abstract features on their terminal nodes. Adopting the general framework of Distributed Morphology (Halle & Marantz 1993, 1994), these terminal nodes can be manipulated after syntax by certain operations (for example, Impoverishment and Fusion). Vocabulary items are inserted under the altered terminal nodes. I suggest that the isolated exceptions are due to the mechanism Impoverishment.

In more detail, recall that vocabulary items have feature specifications for their insertion under the terminal nodes. Now, Impoverishment rules remove certain features from these terminal nodes in specific featural contexts. With these features deleted, the expected vocabulary item cannot be inserted allowing a less specified vocabulary item to appear (Halle 1997). Depending on how many features are deleted, a vocabulary item with fewer feature specifications is inserted, or no vocabulary item at all. Both scenarios are important for the discussion in this subsection. Relevant for current purposes, I assume that all inflectional suffixes have at least one feature that determines in what lexical context they are inserted. Among other consequences, this prevents adjectival inflection from surfacing on nouns (for simplicity's sake, though, these features are not provided). Before I turn to the exceptional cases, I illustrate the basic workings of Impoverishment.

In section 3.1, I briefly discussed the strong/weak alternation of adjective inflections in German. The basic principle is that adjectives not preceded by a definite determiner show a strong ending, as in 68a, but

adjectives that are preceded by a definite determiner show a weak ending, as in 68b.

(68) a. kaltes Wasser (German)
cold-ST water

b. das kalte Wasser
the cold-WK water

Fleshing out the ideas in Roehrs 2009 originally inspired by Sauerland 1996 and Schlenker 1999, Roehrs & Julien (2012) propose that the weak endings are the result of an Impoverishment rule that deletes a certain feature. Without going into too much detail, this feature is part of the case system and is labeled [STRUCTURAL]. Now, strong inflections are more diverse and their vocabulary items are more specified. Importantly, they all involve the feature [STRUCTURAL]. In contrast, weak endings are less diverse and less specified. None of them have the [STRUCTURAL] feature. Roehrs & Julien (2012) formulate the relevant Impoverishment rule in such a way that it removes the feature [STRUCTURAL] from the Infl-head within the AdjP when the adjective is in the context of a determiner in a regular DP structure. As a result, the strong ending cannot be inserted, but the less-specified weak ending is allowed to surface. This accounts for the strong/weak alternation in 68. With this brief illustration of Impoverishment in place, I turn to some exceptional instances in German, Pennsylvania German, and Yiddish.

As stated above, the inflections on definite determiners and strong adjectives are identical in German. There is only one well-known exception to this. In the masculine/neuter genitive, an adjective without a definite determiner exhibits a weak (rather than an expected strong) ending. Compare 69a to 69b.

(69) a. wegen des (schlechten) Wetters (German)
because.of the bad-WK weather

b. wegen schlechten Wetters
because.of bad-WK weather

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In line with the discussion of the strong/weak alternation above, I assume that an Impoverishment rule removes the feature [STRUCTURAL]. However, this particular Impoverishment rule is different from the one discussed above in that it applies regardless of the presence of a definite determiner and only in masculine/neuter genitive contexts. As a result, the strong ending cannot be inserted and only the weak ending can surface.

The second exception involves adjectival endings in Pennsylvania German. Recall that the ending on the plural adjective in Pennsylvania German is *-e* (rather than the expected *-i*). Compare 70a to 70b.

(70)

	ART	DEM	DEM	ADJ	
a. FEM:	di	dí	sell-i	gut-i	(Pennsylvania German)
b. PL:	di	dí	sell-i	gut-e	

To account for this isolated exception, observe that in this language, all adjectives in the plural, be they strong, weak, or mixed, have *-e* (van Ness 1994:429). Again, I suggest that due to an Impoverishment rule, this inflection is not spelled out as *-i* but as *-e*. Specifically, this rule removes a certain feature from adjective structures in the plural. As a consequence, the insertion of the more specified strong ending is blocked and only the less specified weak ending is allowed to surface.[35]

The third exception involves the neuter gender that exhibits some interesting language-specific peculiarities. In Pennsylvania German, the article *es* is different in that it does not have *d*, and the distal demonstrative *sell* is different in that it does not have the inflection *-s*, as shown in 71a.[36] Turning to adjectives, note that in Pennsylvania German, the inflection on the adjective is optional, as shown in 71a. In contrast, in Yiddish, the adjective does not have an inflection when the noun follows,

[35] To determine the actual feature that gets deleted, one would have to lay out one's assumptions about the feature system in Pennsylvania German. This goes beyond the scope of this paper.

[36] German also has a few forms where *d* and *-s* may be absent: *s/dies Kind* 'the/this child'. As far as I know, this is only possible in the nominative/accusative neuter. I assume that the German facts are explained in a way similar to the Pennsylvania German facts.

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as in 71b, but the inflection reemerges when no noun occurs after the adjective, as in 71c.[37]

(71) ART DEM DEM

a. es des sell: en ald(es) kind (Pennsylvania German)
an old child

b. dos dós yents: a gut kind (Yiddish)
a good child

c. a kind a guts
a child a good (one)

While these forms are exceptional from a certain point of view, note that they only occur in very restricted, isolated contexts. In fact, the "missing" elements always surface on related forms. Specifically, the proximal demonstrative *des* in Pennsylvania German has both *d-* and *-s*, and the adjectival inflection may also appear optionally in Pennsylvania German and in Yiddish when the adjective follows the noun. I hypothesize that the relevant abstract features are always present in the syntax and that these context-specific particularities only hold on the surface. In other words, I suggest that these exceptions are not part of the underlying linguistic system but rather a reflex of a subsequent operation.

Here I distinguish between two types of Impoverishment. As discussed in the first couple of cases, one type deletes a certain feature on the terminal node allowing a less specified lexical item to surface. This explains the insertion of a weak ending as opposed to an expected strong ending. The second type, which I refer to as RADICAL IMPOVERISHMENT, deletes all features, including those specifying the lexical context of insertion (perhaps it deletes even the entire terminal node Infl). As a result, no inflection is inserted at all, which accounts for the isolated instances of inflectionless forms.

[37] Note that the ending *-ts* on Yiddish *yen-* in the neuter involves one letter in the Hebrew script (called langer tsadek). I believe that the spelling is misleading in both the Hebrew script and its Romanized rendering, and I assume that the *t* in *yents* is not part of the actual inflection but a reflex of the phonetic articulation.

I propose that the neuter cases in 71 involve radical Impoverishment removing all the relevant features in certain contexts. In particular, in Pennsylvania German, an Impoverishment rule optionally removes these abstract features of the inflection from the adjective and obligatorily—from the distal demonstrative.[38] In Yiddish, these features are removed from the adjective when a noun follows. With all the features deleted, neither the strong nor the weak inflections are inserted bringing about the uninflected surface forms above. As for the article in Pennsylvania German, I proposed above that similarly to Dutch *het*, *es* is a free morpheme inserted under Infl_{N}. If this is accepted, then one can continue to claim that Pennsylvania German and Yiddish are similar to German in the relevant respects.[39]

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[38] It is interesting to note that Pennsylvania German appears to employ several Impoverishment rules. It seems clear that this language is moving toward "simplification" of its morphology; that is, it is making fewer overt distinctions. One might suggest that this type of language change is due to the workings of an increasing number of Impoverishment rules. One might further speculate that when a critical number of these Impoverishment rules is reached, then there is no longer any evidence that Impoverishment rules are still at work (as in English). At that point, the morphology has been reorganized.

[39] A reviewer points out that Swiss German is special in that the feminine and plural articles are (inflectionless) *d* in unmodified noun phrases, as in ia. However, when the noun phrase is modified, as in ib, or under a deictic interpretation, as in ic, these determiners surface as *di* (see Leu 2008:19).

(i) a. d rosä (Swiss German)
the rose

b. di rot rosä
the red rose

c. di rosä
this/that rose

It is not immediately clear why the article has different forms depending on the presence of a modifier, as in ia,b. However, I believe this is not a fatal blow to the current analysis. One way to proceed is to point out that an added modifier as in ib entails Predicate Modification, a semantic operation that forms the union of the adjectival and nominal predicates. Now, one could claim that certain

The question arises why neuter is special in these languages allowing radical Impoverishment to occur. Steinmetz (2001) argues that the West Germanic languages have changed from gender systems where the default was neuter to systems where the default is masculine. This is particularly clear in German and Yiddish, where the number of neuter nouns has decreased over time (I assume the same is true for Pennsylvania German). I interpret this change in default gender as an indication that neuter has become the marked gender in these languages. In this regard, Nevins (2011) proposes that marked features are the target of Impoverishment, whose purpose is to reduce markedness. If his discussion can be extended to the neuter gender in West Germanic, one has begun to answer the question why neuter exhibits so many uninflected forms.

More generally, notice that Impoverishment manipulates abstract features on Infl. This leads to the spell-out of unexpected inflectional suffixes or none at all. Importantly, the Infl-head belongs to both closed-class items such as demonstratives and open-class elements such as adjectives. It seems unlikely that the inflectional patterns of the adjectives, including the isolated exceptions, are memorized on a case-by-case basis. Having argued that demonstratives and adjectives have the same basic inflectional and distributional patterns, I submit again that

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Swiss German articles involve the relevant covert operator, call it &, and build an extended projection, something like [Infl [&]]. Structurally (albeit not semantically), this "predicational article" is the same as a regular demonstrative. Returning to the data in i, one could suggest that the inflectionless article in ia involves a free morpheme, *d*, supplied by vocabulary insertion under Infl_{N}. In this isolated context, the article *d* is thus similar to unrelated stem forms. As to ib,c, the *d* of *di* is inserted by *d*-support to provide a host for the inflection *-i*.

More generally, it is clear that both the support element *d* and the inflection (e.g., Pennsylvania German *es*) can occur as free morphemes in restricted morphosyntactic contexts (as another reviewer informs me, Bavarian German exhibits both a free *d* and a free inflection at the same time). Note though that the remaining determiner forms still provide evidence that these languages have support elements, on the one hand, and determiners and adjec-tives still show the presence of suffixal inflections, on the other. In my view, this state of affairs demonstrates again that one should look at these forms in relation to the other elements in the same and in the other languages.

demonstrative forms are not memorized as unanalyzed chunks either. Next, I turn to unrelated demonstrative stems with irregular inflections.

3.4. Hypothesis 1b: Irregular Inflections on Demonstratives.
Recall from above that irregular forms of the definite article are accounted for based on the assumption that free morphemes are inserted under $Infl_N$. With articles involving one head in the syntax, the insertion of a sole free morpheme accounts for both unrelated stem forms and irregular endings. Unlike articles, demonstratives consist of two heads, Infl and Deic. Unrelated demonstrative stem forms are accounted for by the insertion of free morphemes under Deic. As for the irregular endings on demonstratives, more needs to be said.

English has related determiner stem forms, as shown in 72. As discussed above, I assume that this language has bound morphemes for definite determiners and the dental element is inserted late. However, English is interesting in two other ways: On the one hand, it is well known that adjectives in this language have no inflections at all; on the other hand, the endings on the demonstratives cannot easily be parsed into an inflectional (for example, number) component and a deictic component.[40]

(72)	ART	DEM	DEM	
a. genderless:	the	this	that	(English)
b. PL:	the	these	those	

One can observe that these endings are irregular in that they combine inflectional and deictic features into one element. Factoring out *d*-support, note now that the proposed abstract two-headed demonstrative structure seems to have one head too many. The same basic point can be made for Icelandic.

[40] While one may claim that the singular/plural alternation of *this* and *these* is on par with *analysis* and *analyses*, the claim that such an alternation applies to *that* and *those* is less straightforward. To drive this point home, consider the article that has no separate plural form at all (**the-s*). Leu (2008:36) concludes that English determiners have no regular plural formation and in this paper, I classify the English determiner system as partially opaque.

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Recall that Icelandic is a mixed language. It has one set of determiners that are related and have regular inflections: *(h)-inn and hinn*. In addition, Icelandic also has demonstratives with unrelated stem forms and irregular endings: *þessi* and *sá*. These forms are given below again, in the nominative singular:

(73)

	ART	DEM	DEM	
a. MASC:	(h)-inn	þessi	sá/hinn	(Icelandic)
b. FEM:	(h)-in	þessi	sú/hin	
c. NEUT:	(h)-ið	þetta	það/hitt	

To be clear, similarly to English, Icelandic also has some opaque forms that combine inflection and deixis into one element. One has arrived then at two issues. On the one hand, one has irregular forms; on the other hand, one seems to have one head too many in the demonstrative structure, and one may wonder where exactly these demonstratives are located in the structure. Specifically, one may wonder if these elements are inserted under Deic, Infl, or somewhere else. To account for these types of demonstratives, I employ a second operation from Distributed Morphology.

In order to motivate the next part of the proposal, consider an intriguing interaction between certain prepositions and definite articles in French. As in many other languages, prepositions select noun phrases with articles, as shown in 74a. Interestingly, when the prepositions *à* 'to' and *de* 'from' combine with the definite articles in the masculine (*le*) and plural (*les*), they yield special forms. For instance, the combination of *à* and *le* surfaces as *au*. Consider all the cases in 74b,c.

(74) a. à la mère, de la mère (French)
to the mother, from the mother

b. au père, du père
to.the father, from.the father

c. aux mères, des mères
to.the mothers, from.the mothers

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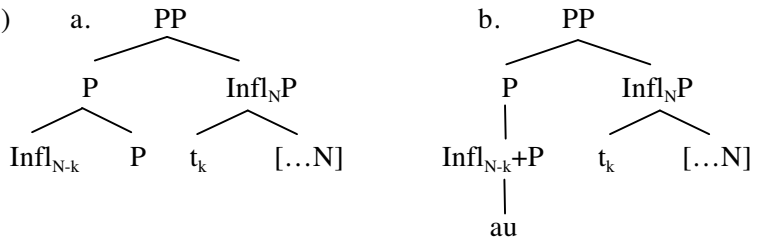
Comparing 74a to 74b,c, one can observe that there is a mismatch between the syntax and the morphology in the latter set of examples. Specifically, there are two syntactic heads in the structure (that is, P, $Infl_N$), but there is only one overt vocabulary item (for example, *au* 'to the'). Elements with this type of multiple exponence are often called portmanteau morphemes (Spencer 1991:50).

To account for these forms in the current framework, one can employ Fusion (Halle & Marantz 1993, 1994). Fusion is a postsyntactic operation that targets two terminal nodes standing in a sisterhood relation and "welds" these two heads together into one head. As a result, the number of nodes is reduced. This operation is followed by vocabulary insertion. To illustrate, I use *au* in 74b and make the standard assumption that prepositions take a DP (here: $Infl_NP$) as a complement. First, to bring about the sisterhood relation, I assume here for concreteness that the masculine $Infl_N$ moves to P, as in 75a. Second, Fusion applies to P and $Infl_N$, as in 75b. This is followed by vocabulary insertion.

(75)

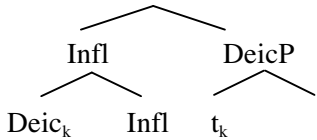


To be clear, the combination of Fusion and late vocabulary insertion allows one to explain syntax-morphology mismatches where more terminal nodes in the syntactic output are realized by fewer overt vocabulary items in PF. In other words, Fusion "masks" isomorphic correspondences between abstract syntactic structures and overt phonetic realizations. With this in place, I turn to the demonstratives, elements that also involve Infl.

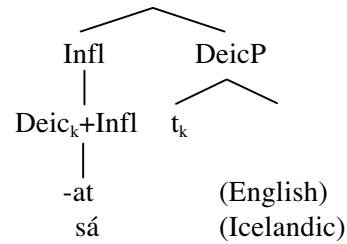
Recall that these irregular demonstrative forms combine features for inflection and deixis into one unparsable element. I propose that after head movement of Deic, Infl and Deic undergo Fusion. Consider 76. Once these two heads are fused into one terminal head, a sole vocabulary item is inserted. Now, in order to account for the nontransparent demonstratives, I propose that partially opaque forms such as English *that*

involve bound morphemes (also Kayne & Pollock 2010) and completely opaque forms such as Icelandic *sá* involve free morphemes.

(76) a.



b.



Continuing with English, I suggest that the feature specifications for insertion of some of the demonstratives are a blend of inflectional features (that is, [PL]) and deictic features (for example, [PROX]). Given my assumptions about vocabulary insertion, the other items can remain underspecified for number:

(77) a. [PL, PROX] → -ese
b. [PL, DIST] → -ose
c. [PROX] → -is
d. [DIST] → -at

To bring about the final forms, the bound morphemes in English have to be supported (for the discussion of the article in English, see below). As for Icelandic, I assume, for the sake of simplicity, that each feature combination of the *þessi*-type and the *sá*-type demonstratives is associated with a vocabulary item. Inserting free-standing morphemes, Icelandic does not require support for these forms. To be clear, Fusion in conjunction with late vocabulary insertion of bound and free morphemes explains the irregular endings in English and the suppletive forms in Icelandic.

Putting Afrikaans aside for a moment, the remaining languages of this type (Dutch, Frisian, the Mainland Scandinavian languages including West Jutlandic) work like English with a minor qualification. Unlike English, these languages have inflections on their adjectives. In section 3.3, I pointed out that the featural specifications of vocabulary items must contain information about the lexical context of their insertion. This

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prevents adjectival inflections from occurring on nouns. This is an important point since not all vocabulary items in the current proposal have complete feature specifications (that is, they may be underspecified). Now, the specification of a lexical context for insertion also explains this minor difference where the adjectival inflections in Dutch, Frisian, and the Mainland Scandinavian languages only occur on adjectives but not on the demonstratives and definite articles (the latter involving an unmanipulated Infl-head). This situates these languages between the German-type languages and English.

More generally, note that Fusion explains both the irregular forms of the demonstratives, which is part of hypothesis 1b, and the apparent superfluity of a second head in the proposed demonstrative structure. In other words, one can maintain that all Germanic languages start out with a two-headed demonstrative structure. Languages vary as to whether or not they have Fusion in their grammar that "masks" the underlying structure (in section 5.1, I formulate a diagnostic for Fusion). For clarity, I briefly delineate some differences between Impoverishment and Fusion.

Both Impoverishment and Fusion are postsyntactic operations that manipulate Infl. While Impoverishment deletes certain features, Fusion welds together Infl and Deic. Furthermore, Impoverishment works in a feature-specific manner, but Fusion applies across the entire paradigm of certain demonstratives. Recalling that as a mixed language, Icelandic also has regular determiners, I assume that Fusion does not apply in a language-general fashion but only throughout certain paradigms.[41] In the last part of this subsection, I discuss Afrikaans, which has nonsyntactic inflections on adjectives, and I complete the discussion of the determiner system in English, which has no inflections on adjectives at all.

Compared to the other Germanic languages, Afrikaans has the simplest determiner system. It has just one basic pair:

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[41] I am not aware of any telling evidence that inflected adjectives undergo Fusion. If this is so, then Fusion is restricted to demonstratives in this domain of the grammar. This restriction might be a reflex of the diachronic development of demonstratives. This seems particularly clear for complex demonstratives where the deictic particle *si* was integrated more and more into the structure of the word over time until the morpheme boundaries shifted or became opaque (see section 4).

(78)		ART	DEM	
	Genderless/PL:	die	dié	(Afrikaans)

Ponelis (1993:168) and Donaldson (1994:491) state that *dié* can be both proximal and distal. In other words, the deixis of the demonstrative has no inherent specification. It seems that the value for deixis depends on other factors; for instance, adverbial elements can be added that specify its deictic value. Below, I illustrate the deictic component of the demonstrative as unspecified [DEIC]. Furthermore, according to Donaldson (1994:486–488), adjectives in Afrikaans may exhibit the inflection *-e*. This inflection depends on certain phonological properties of the adjective stem and, partially, on the semantics of the noun phrase.

Given these properties of the inflection, I assume that *-e* is not syntactically determined; that is, the inflection does not take part in concord of phi-features within the noun phrase (also Corver & van Koppen 2011). However, given the very existence of inflections on adjectives (albeit of a different nature), I assume that the determiners have an inflection too. This determiner ending is uniformly *-ie*. I assume that, similarly to Dutch, Frisian, and the Mainland Scandinavian languages, the inflections on the determiners and adjectives in Afrikaans have separate featural specifications for their insertion. Unlike these languages, I assume that Afrikaans does not allow Fusion of Infl and Deic. With this in place, I suggest the following featural specifications for the determiners, where 79a applies to the Deic-head and 79b is inserted under Infl of Deic or N.

(79) a.	[DEIC]	→	no overt segment
b.	[]	→	-ie

The inflection *-ie* is supported by the definiteness marker. Recall that the abstract deictic feature attracts stress.

Returning to the discussion of English, this language has five definite determiner forms, each with a different ending. Recall 72 above. Furthermore, English is the only language in the data where adjectives have no inflections at all. While one might claim that English has no features for grammatical gender, it has features for number and definiteness. I assume that at least number is present in fused Infl+Deic and Infl_{N}; [DEF] has moved to adjoin to Infl_{N}. Since English has no inflec-tional endings, I

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assume that vocabulary insertion does not merge any element under $Infl_N$, the position of the definite article. In other words, $Infl_N$ does not contain a bound morpheme.[42]

To explain the presence of the overt article, I propose that the entire form *the* is inserted under $Infl_N$ to make [DEF] visible (see section 3.2). As to the demonstratives, I suggest that similarly to *d*-support in German (see 64), *-e* on the definiteness marker *the* is later deleted; that is, cases such as *the-is* surface as *this* without the loss of any deictic information. This implies that *d*-support in English has a slightly different status: The definiteness marker only supports the bound morpheme under Infl+Deic, but it provides no support for the suffixless $Infl_N$.[43]

3.5. Interim Summary.

This paper studies the definiteness marker and the inflection on definite determiners. The aim is to figure out the inner makeup of these determiners and to identify some consequences for the underlying syntax of the noun phrase as a whole. I began this section by formulating the hypothesis that all Germanic languages have related definite articles and demonstratives. In addition, some languages may have a few un-related determiner forms. With regard to inflection, I have sorted the Germanic languages into three groups. Taking adjectives with strong inflections as the point of reference, some languages have determiners with regular inflections, some languages have determiners with irregular endings, and some languages have both. I have established that the two dimensions of variation—that is, stem form and inflection—may occur separately or

[42] Alternatively, one could assume that *-e* on *the* is inserted under $Infl_N$ and later supported by *th*. However, van Gelderen (2007:301) points out that this *-e* can be left out in some dialects. This seems to corroborate the claim that English has no inflectional endings and the *-e* must be of a different status.

[43] This dichotomy may have to do with the history of the language. Discussing a number of different features and constructions, McWhorter (2002) argues that English has a special status among the Germanic languages. He suggests that this is the result of the imperfect acquisition of a foreign language by adults, in this case the acquisition of English by Scandinavians. However, Crisma (2011) argues that at least the definite article is due to Celtic influence. Note that both proposals highlight the special status of the English determiners.

together. This interaction gives rise to four possibilities represented in table 2 for articles and in table 3 for demonstratives.

	Related stem	Unrelated stem
Regular inflection	der (Penn. Ge)	es (Penn. Ge)
Irregular ending	the (En)	æ (W. Jutl)

Table 2. Cross-classification of articles.

	Related stem	Unrelated stem
Regular inflection	dieser (Ge)	seller (Penn. Ge)
Irregular ending	that (En)	sá (Ic)

Table 3. Cross-classification of demonstratives.

As all combinations of stem forms and inflections are possible, the different operations of the account must be able to occur independently but they must also be compatible with each other at the same time.

I have provided evidence that the definiteness marker is special. It is semantically vacuous and cannot be directly tied to definiteness. I have proposed that the definiteness marker is not part of the syntactic structure per se but rather it supports inflectional suffixes making the feature [DEF] visible at the same time. Languages vary as to the details of the support mechanism. I have proposed that definite articles involve one head in the syntax (Infl) but demonstratives—two (Infl, Deic). The latter type of determiner has been shown to have distributional properties similar to those of adjectives.

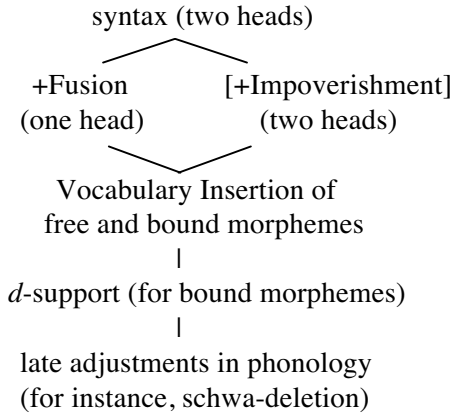
I have proposed that all these elements, including articles, involve extended projections closed off by the inflection. The difference is that demonstratives make up the entire extended projection whereas articles form only one part of it, with the head noun forming the other part (Giusti 1997:100). As a general and, I believe, attractive consequence, all these elements receive a uniform structure explaining their commonalities in a principled way. Furthermore, all the determiners in table 2 and 3 follow from the well-established distinction between bound and free morphemes, where the former have to be supported by the definiteness marker, and the operation Fusion.

Specifically, the Pennsylvania German article *der* is analyzed as a bound morpheme that is supported by the definiteness marker. English *the* functions as the definiteness marker. Pennsylvania German *es* and West Jutlandic *æ* involve free morphemes. As to the demonstratives, they involve two heads. Like the articles, they also involve bound and free morphemes. Unlike the articles, they may undergo Fusion, a post-syntactic operation that welds together Infl and Deic. In more detail, German *dieser* involves a bound morpheme supported by the definiteness marker. English *that* is basically like German *dieser* but, in addition, involves Fusion. Pennsylvania German *seller* involves a free morpheme. Icelandic *sá* is similar to Pennsylvania German *seller* but also involves Fusion. In other words, the distinction between bound and free morphemes is compatible with the presence or absence of Fusion in the grammar. Finally, a number of isolated, specific exceptions were accounted for by Impoverishment rules that manipulate regular underlying features thereby allowing exceptional forms to appear.

The flow chart in 80 summarizes the basic model of grammar adopted here. I illustrate the derivational progression with two examples: English *that*, which has a related stem and an irregular ending, and Pennsylvania German *sell*, which has an unrelated stem and no inflection at all. Given that two heads project in the syntax, I have proposed that English *that* involves Fusion of Infl and Deic. This results in one node where the bound morpheme *-at* is inserted. Bound morphemes in English are supported by the definiteness marker *the*. The correct final form is obtained by deleting the vowel *-e* of the vacuous definiteness marker. As to Pennsylvania German *sell*, this demonstrative form only occurs in the neuter. Rather than appealing to Fusion, I have proposed that Impoverishment deletes all features in this featural context (this context-specific application is indicated in 80 by square brackets).[44] Consequently, no inflectional morpheme is inserted and Infl remains empty. The unrelated stem form is accounted for by the insertion of a free morpheme.

[44] Note that Fusion and Impoverishment could conceivably co-occur. Since both mechanisms account for exceptions, it is hard to tease them apart when Fusion is at work, as the latter applies throughout the entire paradigm.

(80)



Finally, I briefly comment on the Romance languages. All these languages have unrelated determiner forms and, except Sardinian, they all have irregular endings. I propose that all demonstrative structures in the Romance languages undergo Fusion, following which free morphemes are inserted. This explains the typological difference between Germanic and Romance.[45]

4. Diachronic Relation among the Definite Determiners.

In the last section, I proposed that demonstratives have internal structure. While this is certainly not a novel claim, the current proposal differs from previous accounts in its details (see sections 2 and 3). Importantly, the current analysis provides an explanation for some other facts. In this regard, recall hypothesis 2 from the introduction:

(81) *Hypothesis 2: Diachronic Relation among Definite Determiners*

The definite article, the complex demonstrative, and the simple demonstrative are related to the simple demonstrative of the older variety of the same language.

[45] Another difference, much better known and studied, is that Germanic exhibits the Verb-Second constraint. It is interesting to point out for Germanic that both phenomena—that is, the Verb-Second constraint and related definite determiners—seem to involve deficient elements: C must be made overt by a verb (in matrix clauses) and determiners must be supported by *d* (for a similar parallelism but in different terms, see Leu 2010).

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This section discusses this claim in detail. To pave the way, I first show that the two-headed structure easily accommodates adverbial elements in the contemporary Germanic languages. In the second subsection, I argue that this structure allows a straightforward reanalysis of the old deictic particle *si* resulting in the contemporary complex demonstrative. Specifically, assuming one contentful head in the demonstrative structure (Deic), Spec-Head reanalysis of *si* made the latter an integral part of the demonstrative and changed the semantico-syntactic status of the definiteness marker from a deictic head to a support element. Third, I discuss how the definite article developed from the old simple demonstrative and how the latter underwent a change itself. Finally, I briefly discuss North Germanic, which does not fall under 81.

4.1. Adverbial Elements inside Demonstrative Structures.
Demonstratives can occur with adverbial elements (for example, Brugè 1996, Bernstein 1997, Roehrs 2010). These adverbial elements are often referred to as reinforcers. A simple example is *this here house* in nonstandard English. Relevant for current purposes, Brugè (1996) and Roehrs (2010) argue in detail that these adverbials are part of the demonstrative structure. The question arises as to where exactly the adverbial element is located in this structure.

The demonstrative structure proposed above involves two heads and three phrasal positions: two specifiers and one complement position. If the lower head of the demonstrative structure moves up, then there is one specifier position above the complex head structure and two phrasal positions below it. While I know of no Germanic language that fills all three positions at the same time, Yiddish and Eastern Norwegian show, when examined together, that all three phrasal positions are necessary parts of the demonstrative structure.

Although this is not a very frequent pattern, in some languages adverbial elements can precede the demonstrative. As discussed in section 2.2, Afrikaans and Yiddish are such languages (for other languages, see Roehrs 2010). Focusing on Yiddish, *ot* 'here' appears in the left periphery of the noun phrase, as shown in 82a. In line with Roehrs 2010, I propose that this element surfaces in the highest specifier position of the demonstrative structure. In current terms, this position is labeled Spec,InflP in 82b.

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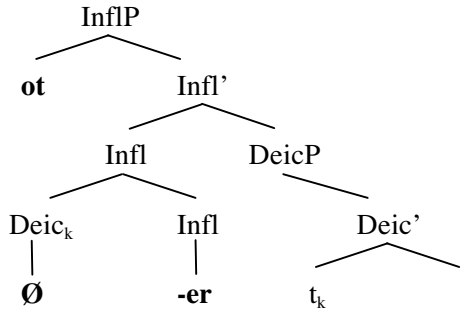
(82) a. **ot** **der** guter man (Yiddish)
here this good man
'this here good man' (Jacobs 2005:186)

b.

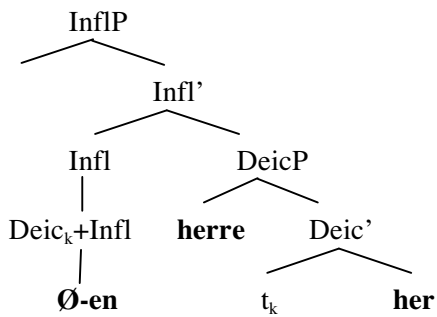


The inflectional suffix in 82a is supported by the definiteness marker. Also, assuming the structure of the noun phrase in section 3.2, 82b itself is located in the specifier position of $Infl_N$.

Certain dialects in the Scandinavian languages may exhibit two adverbial elements immediately to the right of the demonstrative, as shown in 83a. *Pace* Leu 2007, 2008, I propose that one is in Spec,DeicP and the other is in the complement position of Deic, as in 83b.

(83) a. **den herre her** populære boka mi (Eastern Norwegian)
this here here popular book-DEF my
'this popular book of mine' (Vangsnes 2004)

b.



D-support brings about the final form. Recall also that Infl and Deic in English-type languages undergo Fusion. Comparing 82b and 83b, note

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that adverbial elements can be accommodated in the specifier positions independent of whether or not the complex head structure undergoes postsyntactic Fusion. In other words, Fusion does not affect the syntax of the demonstrative structures, and adverbial elements are possible in English-type languages.[46]

To sum up, Yiddish and Eastern Norwegian show that demonstrative structures have three phrasal positions. The two-headed structure is fully compatible with the distribution of these adverbial elements. In fact, as far as I am aware, only one adverbial element can precede the demonstrative, but two may follow. I take this as evidence that the Deic-head underwent syntactic movement, which is upwards.

The discussion of these adverbial elements allows one to rule out alternative derivations that might combine the two heads in 82b by different means. For instance, Embick & Noyer (2001) suggest that two heads can undergo Morphological Merger. This postsyntactic operation has two subtypes: Lowering and Local Dislocation. For current purposes, I focus on Lowering, which allows displacement across adverbial elements. On this analysis, the Infl-head in 82b would attach onto the Deic-head. In other words, this operation involves downward displacement. Now, if this option were correct, then two adverbial elements should be able to occur in front of the demonstrative but only one after it, contrary to fact (recall that the *-o* on Yiddish *ot-o* has a special status, see note 8).[47]

As I show below, the analysis developed so far also provides a straightforward account for the development of complex demonstratives

[46] Note that the current account is different from the type of proposal made by Bobaljik & Thráinsson (1998), who argue that Infl can be split in some languages but not in others. Crucially, this difference already holds in the syntax. If one were to replace an Infl+Deic head created by postsyntactic Fusion with a syntactically unsplit Infl+Deic, then there would be only one phrasal position in the demonstrative structure following this unsplit head. Given that the Mainland Scandinavian languages have irregular endings (that is, the unsplit Infl+Deic would in this scenario replace the Infl+Deic that results from Fusion), this alternative structure could not accommodate the two adverbial elements in Eastern Norwegian.

[47] Morphological Merger might be possible in other, non-Germanic languages though.

that contain *s*, such as German *dieser* 'this'. To the best of my knowledge, this change has never been given a structural account before.

4.2. Development of Complex Demonstratives.
I turn to an interesting diachronic change in Germanic that involves the old deictic particle *si*. In the last subsection, I pointed out that adverbial elements are in specifier positions. If one assumes that these elements can undergo Spec-Head reanalysis, then one can explain the diachronic development of complex demonstratives in Germanic. Specifically, employing a two-headed demonstrative structure allows one to tie the reanalysis of *si* to the change of the definiteness marker from a Deic-head to a support element. Besides that, I claim that this change had consequences for the entire system of definite determiners in Germanic.

Factoring in late *d*-insertion, I have analyzed simple demonstratives such as 84a as phrases with a segmentally unrealized Deic-head, as in 84b.

(84) a. dér (German)
b. d+$Ø_{Deic}$-er

By hypothesis, OHG also involved two heads in its demonstrative structure. Unlike the contemporary language, OHG made two overt heads available; that is, I propose that *d* was inserted in Deic by vocabulary insertion (and not by *d*-support):

(85) a. thër (OHG)
b. thë$_{Deic}$-r

I propose below that over time, the deictic head *thë* was replaced by *si* forming the complex demonstrative *dieser* 'this'.[48] As a result, the simple demonstrative *thër* also changed such that Deic no longer received an overt realization. In other words, the definite determiner system was reorganized: A new demonstrative element came into being, as in 86a, the old demonstrative changed its segmental composition, as in 86b, and the definite article emerged, as in 86c.

[48] As pointed out in note 3 in section 1.3, these changes began before they were first documented in OHG. For simplicity, I abstract away from this complication here.

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(86) thë$_{Deic}$-r → (a) d+ies$_{Deic}$-er
→ (b) d+Ø$_{Deic}$-er
→ (c) d+er

This development coincided with the status of the definiteness marker changing from a deictic head in OHG to a dummy in Modern German. As discussed above, now this element by itself has no semantics and is inserted late in the derivation. I consider this in more detail below.

Simple demonstratives in the older Germanic languages could be reinforced by *si*.[49] Haspelmath (1993:282) glosses this element as 'behold' and points out that there are three stages in the development of the complex demonstrative. First, *si* followed the inflection on the simple demonstrative, as in 87a. Second, there were hybrid forms with the deictic reinforcer sandwiched between two inflections, as in 87b. Third, the inflection could only follow *si*, as in 87c. Haspelmath refers to this process as the "externalization of inflection." I gloss the definiteness marker as D and the deictic element as SI (data are taken from Haspelmath).[50]

(87) a. þaim-si (Proto-Scandinavian)
D-DAT.MASC-SI

b. dhea-s-a (OHG)
D.ACC.FEM-SI-ACC.FEM

c. d-ies-er (German)
D-SI-NOM.MASC

According to Braune & Eggers 1987:246, most of the complex demonstrative forms in OHG have reached the third stage shown in 87c

[49] To be precise, the North and West Germanic languages had *si*. In contrast, East Germanic Gothic formed a reinforced structure by adding *-uh* as in nominative singular neuter *þatuh* (see Braune & Ebbinghaus 1981:101, Prokosch 1938:271).

[50] Note that the definiteness marker is spelled differently in 87b. This is an orthographical variant of *th*. Later, *th* changed to *d* (Schmidt et al. 2000:194, 207).

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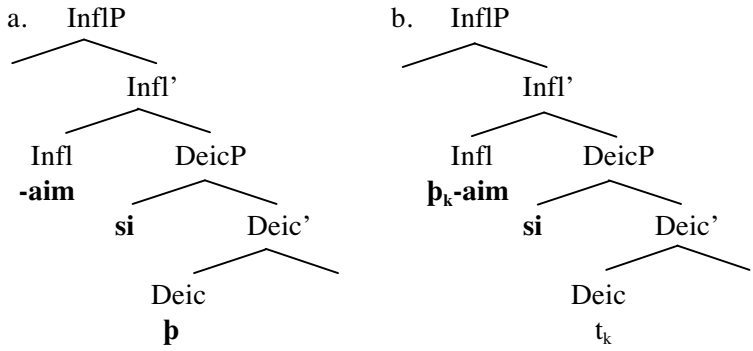
(masculine/neuter genitive forms are still at the second stage; see Paul et al. 1989:228).

With these data in mind, I propose that the deictic particle underwent some changes that eventually resulted in it becoming an integral part of the demonstrative. Two fundamental changes can be found in the new shape of the deictic element (that is, *si* > *s* > *ies*) and its new, internal position. The proposal of a two-headed demonstrative structure relates the change in the shape of this element to the change in its position. I sketch out a three-stage development to show how the shift took place.

I assume that at the beginning, the particle *si* behaved like other adverbial elements. I propose that it was merged into Spec,DeicP. The tree in 88a shows the underlying demonstrative structure, and the tree in 88b shows the structure after head movement of the definiteness marker.

(88) *First Stage: Reinforcing the Demonstrative with* si



With Deic undergoing head movement, *si* winds up in the right periphery of the demonstrative structure.

In the second stage, *si* underwent a phonological reduction that resulted in a clitic-like element. With clitic-like *s* following, I assume that the inflection on the demonstrative was no longer fully "active" morphosyntactically, and a second, external inflection could (had to?) now be realized in $Infl_N$. I return to this below. First, though, consider the internal structure of the demonstrative in detail:

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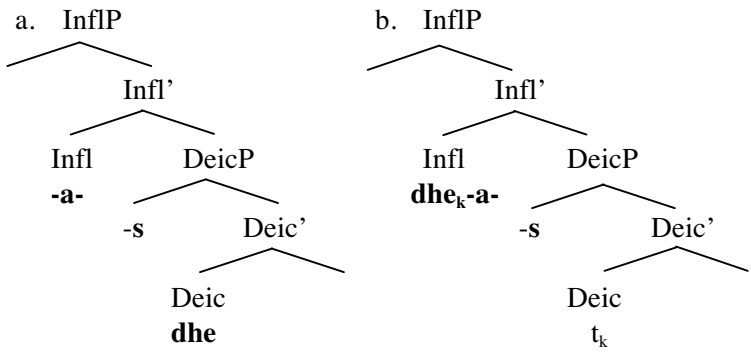
(89) *Internal Structure of the Demonstrative*



As discussed above, the demonstrative structure as a whole surfaces in Spec,InflP_N. As to the second, external inflection, I propose that it is inserted under Infl$_N$:[51]

[51] As pointed out in section 3.2, the North Germanic languages allow demonstratives and articles to co-occur. Consider the example with an adverbial element in i. Note that both determiners have an ending, one under Infl+Deic of the demonstrative structure and one under Infl$_N$ (the example is from Marit Julien, personal communication):

(i) på den där den lilla grupp-en som … (colloquial Swedish)
with that there the small group-DEF which
'with that small group that…'

To explain the absence of the second *dhe* under Infl$_N$ in 90, I assume that the dental element was not a dummy yet. Note in this regard that *-s* in 89 is not yet in Deic, the base position of *dhe*. Also, a reviewer points out that 90 is similar to the following Norwegian example (gloss provided by the reviewer):

(ii) den herre klokka (Norwegian)
this-INFL here-INFL watch-DEF
'this here watch'

Note, however, that the inflection on *herre* in ii is presumably part of the demonstrative structure. In this regard, notice that demonstrative structures may contain adjectival reinforcers as in Yiddish *der doziker man* 'this here$_{ADJ}$ man'.

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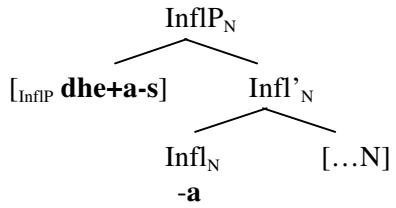
(90) *Intermediate Stage: Realization of the Inflection in Infl$_N$*



Before I turn to the third stage, I consider two points in more detail. First, while pursuing a different account, Haspelmath (1993:298) states that a second, pleonastic inflectional affix occurs when the original form is "irregular and unproductive;" that is, when it is no longer morpho-semantically transparent. If so, one expects to find hybrid forms where the inflections differ in shape. This is indeed the case with these demonstratives. For instance, older upper German dialects formed the simple demonstrative in the nominative/accusative plural neuter as *dei*. Importantly, the reinforced demonstrative shows two different inflections (see Braune and Eggers 1987:247):

(91) de-i-s-u, de-i-s-iu, de-i-s-o (upper dialect of OHG)
D-INFL-SI-INFL, D-INFL-SI-INFL, D-INFL-SI-INFL

To explain the co-occurrence of two different inflections more technically, I tentatively propose that the (inner) irregular inflection undergoes only "partial" concord. There are at least two ways to think of this: All concord features are present in Infl of the demonstrative structure, but only some of them are licensed/valued; alternatively, only some of the concord features are present in Infl and all of them are licensed/valued. While I am not able to decide between these scenarios, either one involves inflections that are in some sense incomplete and defective. In contrast, I suggest that the second (outer) inflectional morpheme is regular in that it undergoes "full" concord where all features are present and licensed/valued. Now, if the inner inflection was indeed somehow incomplete and defective, it is not surprising that *dei* was later

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For a specific reason to be skeptical about the inflection on *herre* being in Infl$_N$, see Roehrs 2010:248, note 25.

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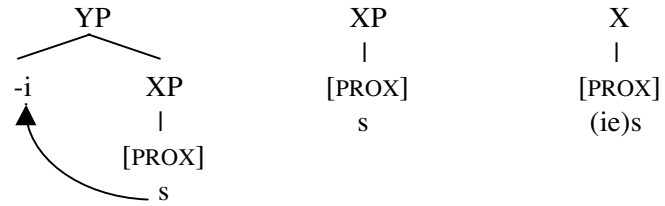
replaced and the reinforced demonstrative developed into (the expected) *disiu*.

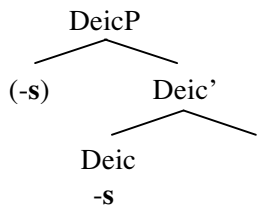
Second, one must also schematize the development of *si* itself. To illustrate this developmental sequence, I show how *si* moved from the status of phrase via clitic to head. In 92a,b, the reinforcer has the status of a phrase and is merged in Spec,DeicP. Unlike the complex phrase in 92a, *s* in 92b is a clitic-like element. Finally, 92c shows a head that is merged in Deic.

(92) a. *Phrase* b. *Clitic* c. *Head*



Next, consider what happens once the clitic has changed into a head. In the third and final stage, the reinforcer undergoes Spec-Head reanalysis à la van Gelderen 2004. In other words, the *s* in 92c is merged in the Deic-head of the two-headed structure:

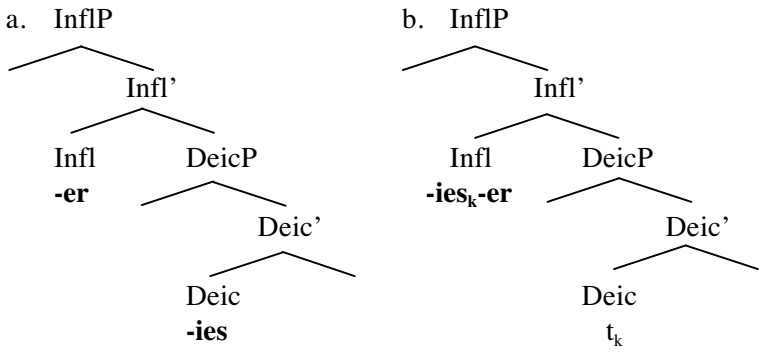
(93) *Spec-Head Reanalysis of the Reinforcer*



As for the stem vowel of the demonstrative, the change from /ë/ to /i/ begins with forms such as *disiu* and spreads by analogy to the other demonstrative forms in the paradigm (for details, see Braune & Eggers 1987:247, Paul et al. 1989:228). Once this process was completed, the vowel, which formed part of the simple demonstrative, came to be associated with the deictic element resulting in *ies*. A direct consequence of this syntactic and morphophonological reanalysis is that the former

deictic particle replaced the definiteness marker as the deictic head. In other words, *si* changed from an adverbial particle to *-ies*, which now forms an integral part of the proximal demonstrative:

(94) *Third Stage: After Spec-Head Reanalysis of the Reinforcer*



I suggest that this replacement of the definiteness marker by the former reinforcer changed the status of the definiteness marker from a deictic head to a support element:[52]

(95) a. *dheasa* 'this': dhe_{Deic}-a-s_{Reinf}-a (OHG)
b. *dieser* 'this': d+ies_{Deic}-r (Modern German)

Comparing 95a to 95b, this reanalysis led to a change in the morpheme boundaries.[53] More generally, note that the two-headed demonstrative structure ties the change of *si* to the change of the definiteness marker in a direct structural manner.

[52] Interestingly, Wiltschko (1998:150) proposes that the *s-* on *sie* 'she/they' changed from a determiner morpheme to a support morpheme in the very early history of German.

[53] In languages such as English, the morpheme boundaries have become opaque over time (synchronically derived by Fusion). Note also that once the reanalysis of the adverbial element is well underway, new reinforcers are possible. This is most notably evidenced in Germanic languages such as English (for instance, *this here house*) and Pennsylvania German (for instance, *sell.datt datt mann* 'that there man', where the adverbial element has been doubled; see Putnam 2006, Alan Raber, personal communication with Michael Putnam).

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To recapitulate, OHG and Modern German demonstratives both involve two-headed structures. Semantically, they are definite; that is, there is a [DEF] feature present in the syntax. They differ, however, in that OHG makes this feature visible by vocabulary insertion, while Modern German makes it visible by *d*-support of the inflectional suffix. Given the assumption that these are late operations, one does not expect differences in the syntax. To the best of my knowledge, this is indeed the case. Finally, one may wonder why the demonstrative system was reorganized in the first place. Considering the three-stage developmental sequence sketched above, two important questions arise: (i) Why was *si* inserted at all? and (ii) Why was *d* replaced by *s*? I briefly discuss a traditional type of account and a more formal solution.

In the traditional literature, diachronic changes are often explained on the assumption that old and new elements are related through a chain reaction. Specifically, a "push" or a "pull" operation is invoked in these types of accounts. In the current context, one could claim that the reanalysis of *-s* as a head pushes *d* out of the Deic-head position, or that the reanalysis of *d* as a dummy pulls *-s* into Deic. Turning to the two questions above, this traditional account has no clear answer to the first question: The initial appearance of *si* seems to be accidental.

As to the second question, there is also no straightforward way to determine whether this is a push or a pull operation. More importantly, it is not clear why reanalysis has taken place at all. Furthermore, note that a pull operation could, in principle, remain incomplete. In other words, by staying a clitic, *s* does not necessarily have to move into Deic. This would result in the ungrammatical 96a, where in Modern German, a segmentally unrealized deitic head and a regular inflection would be followed by the reinforcing clitic *-s*, as in 96b.

(96) a. *dérs
b. d+$Ø_{[DEIC]}$-er-$s_{[PROX]}$

While 96a may be grammatical in other types of languages, note that an incomplete pull operation does not tie the change that the definiteness marker underwent to the presence of the deictic particle in a dependence relation. To rule this option out for Modern German, it must be stipulated

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that *s* is pulled all the way into a head position.[54] To be clear, neither question receives a satisfying answer under the traditional type of "push or pull" approach.

A more promising account was suggested to me by Elly van Gelderen (personal communication), and the proposals in van Gelderen 2011 provide better answers to these questions. As part of formal economy considerations, an answer to the first question is found in Feature Economy, which claims that semantic and interpretable features are to be minimized in the derivation. More precisely, semantic features change to formal interpretable features [iF]. Interpretable features turn into uninterpretable features [uF] and may eventually get lost. Crucially, when a feature has become uninterpretable, it becomes a probe in the sense of Chomsky 2000 and requires a goal to be valued. Now, assuming that the deictic feature on *þ* in *þaim* 'that' has become uninterpretable, *si* is inserted to value it, which results in *þaimsi*. This accounts for the presence of the deictic particle in the first stage above.

The second question is answered by van Gelderen's Head Preference Principle. According to this principle, it is more economical to insert a (structurally) smaller element—a head, than a (structurally) larger element—a phrase. This principle provides a plausible rationale for the frequently employed Spec-Head reanalysis. Now, if the uninterpretable feature on *d* is lost, then clitic *s* can "renew" the deictic system by merging as a head in Deic complying with the Head Preference Principle (eventually, this renewal of the featural makeup may result in an uninterpretable deictic feature again). This accounts for *s* replacing *d* in the third stage above (note that the second stage above has nothing to do with Deic but with concord on Infl in the demonstrative structure).[55]

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[54] Note that 96a only presents an issue if the segmentally unrealized deictic feature under Deic is unspecified for proximity indicated by [DEIC] in 96b, as [DIST] on Deic would lead to incompatibility with [PROX] on *s*.

[55] As proposed in the main text, the deictic feature on the definiteness marker became uninterpretable (first stage) and was later lost (third stage). This change might be connected to the emergence of the complementizer *that* that developed from the neuter demonstrative (for this development in German, see Paul et al. 1989:438, Schmidt et al. 2000:235, 296, 374). Currently, it is not clear to me if these are parallel developments or if one of these changes caused the other.

To sum up, van Gelderen's proposals based on formal economy considerations provide better answers to the two questions above than the traditional type of account.[56] With the definiteness marker losing its deictic specification, the old simple demonstrative changed its segmental composition and the definite article could emerge.

4.3. Simple Demonstratives and Definite Articles.
As is well known, articles often derive from demonstratives (Diessel 1999:128, Lyons 1999:331, Harbert 2007:142; for Icelandic, see next subsection). Recall that the complex demonstrative was basically established in OHG; that is, most attested demonstrative forms are in stage 3 discussed above. Now, as Paul et al. (1989:226, 383) point out, the definite article could still be missing in some contexts in Middle High German (MHG) where it is used today. It seems clear, then, that the emergence of the definite article took a long time and came into being after the complex demonstrative had been established.

In her discussion of the Definiteness Cycle, van Gelderen (2007, 2011) proposes that demonstratives in phrasal positions are reanalyzed as articles in head positions. She argues that this structural reanalysis coincides with a change in the featural makeup of these elements. As pointed out above, semantic features change to formal features, and the latter may eventually disappear (there is one proviso here, namely, the resultant definite article retains one uninterpretable feature requiring the presence of a noun). Van Gelderen does not discuss the inner structure of demonstratives in much detail. One interesting difference is that I have aligned her [LOC] (that is, deictic) feature with a deictic head. I believe though that her proposal and the current account are largely compatible.

As discussed above, at the end of the development of the proximal demonstrative, the definiteness marker was no longer inserted under Deic and became a dummy that supported bound morphemes. In other words, the deictic feature was no longer associated with the dental stem. I propose that as a consequence, the Deic-head could be realized by *-ies* or by no overt segment at all (represented by Ø). The former option derives the proximal demonstrative (see previous subsection); the latter option

[56] There is a small caveat here. The analysis in van Gelderen assumes early vocabulary insertion, but the current one employs late insertion. It is my hope though that her ideas can be reformulated in current terms.

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captures the reanalysis of the old simple demonstrative as its later counterpart. For the latter change, compare 97a to 97b. Furthermore, with a support element now available in the grammar, inflectional suffixes could successfully be inserted under $Infl_N$. This derives the emergence of the definite article in 97c.

(97) a. *thër* 'that': $thë_{Deic}$-r (OHG)
b. *dér* 'that': d+$Ø_{Deic}$-r (Modern German)
c. *der* 'the': d+r

In other words, the definiteness marker changed from the deictic head *thë* to the dummy *d* that supports bound morphemes. Taken together, these developments led to the reorganization of the definite determiner system in German (and other languages). Finally, I discuss the diachronic and synchronic relatedness of articles and demonstratives in North Germanic exemplified here by Icelandic.

4.4. Definite Articles and Simple Demonstratives in Icelandic.
Modern Icelandic has an almost homophonous word pair consisting of the demonstrative *hinn* and the article *(h)-inn*. The only exception to this pattern is in the neuter nominative/accusative singular, where the demonstrative is *hitt*, but the article is *(h)-ið*. Given these (almost) identical forms, one might claim that similarly to the article in German, the article in Icelandic derived from the demonstrative. However, there are reasons to be doubtful about such a conjecture.[57] Rather, it seems more likely that the demonstrative and the definite article are two different words with two different histories.[58]

Specifically, *hinn* (fem. *hin*, neut. *hitt*) developed from the PIE root $^{+}k^{j}o$ + *eno*, but *inn* (fem. *in*, neut. *it*) developed from PIE $^{+}$*eno* (see de Vries 1962). In early skaldic poetry, the two are strictly separated: *Hinn* always carries stress, but *inn* never does. In later Icelandic and Norwegian, the *hinn* forms often replace the *inn* forms. In such cases, the

[57] The following section is based on an email exchange with Kari Gade. I am very grateful for her help with this section.

[58] As for the Mainland Scandinavian languages, there is evidence that the suffixal article also has a different history from the freestanding one (Lohrmann 2010: 55–60).

former were unstressed and the strongly stressed *hitt* was replaced by *hit*, either because of analogy with *it*, or because the *-tt* lost quantity in unstressed position (see Noreen 1970:§§471, 285). For instance, with an adjective present, one can find examples with or without *h*: *hit fyrra sumar* = *it fyrra sumar* 'the last summer'. At the same time, one can find unreduced forms: *hitt var fyrr* 'that was earlier'. In 14th-century Icelandic, final *-t* changed to *-ð* in weakly stressed syllables. Hence, *it* and *hit* became *ið* and *hið* (see Noreen 1970:§248).

In more general terms, Icelandic started out with two separate forms. Later, these forms fell together with stress being the main distinguishing factor. It is not clear to me if stress always coincided with deixis. Be that as it may, differences in stress led to the separation of the determiners into today's articles and demonstratives, which is only visible in the nominative/accusative neuter. For the purposes of this paper, I assume that contemporary speakers have no access to the varying diachronic developments of these different determiners. As such, I treat these elements as morphosyntactically related in the current grammar of this language. I assume that the difference in inflection between Icelandic *hitt* and *(h)-ið* has a phonological explanation.[59]

To sum up this section, I have shown that adverbial elements are straightforwardly accommodated by the two-headed demonstrative structure. In fact, the distribution of these adverbial elements provides an argument that Deic undergoes head movement to Infl. Furthermore, I have proposed that the proximal demonstrative and the definite article both derived from the distal demonstrative, whereby the latter underwent a change as well. This development resulted in a new determiner system. The proposal that the deictic particle changed from a free to a bound morpheme (*si* > *s* > *-ies*) implies that the definiteness marker changed from a free deictic morpheme to a support element. These two changes are tied together in the two-headed demonstrative structure where the Deic-head is filled by different vocabulary items over time. Moreover, the change to bound and unrealized morphemes (*-ies*, *-Ø*) supported by

[59] Katzir (2011:68) formulates two contemporary rules that bring about the following changes: *hint* > *hinð* > *hið*. It is clear that the first rule must not apply to the demonstrative *hitt*. Assuming that the underlying suffixes of the definite article and demonstrative are indeed the same, the first rule only applies to unstressed elements (for example, articles).

the definiteness marker allows one to relate the definite determiners both diachronically and synchronically. Finally, I have briefly discussed the North Germanic languages. I have suggested that although their determiners seem to have followed separate paths of development at the beginning, they can be integrated into the current proposal.

5. Existent Forms, Accidental and Systematic Gaps.

In the previous sections, I gave substance to the main claim of this paper updating it by matching overt components with abstract syntactic heads:

(98) *Hypothesis 3: Inner Makeup of Definite Determiners*

Articles only involve an inflection, which means they have one syntactic head: Infl.

Demonstratives only involve a deictic element and an inflection, which means they have two syntactic heads: Deic and Infl.

In this section, I provide additional arguments in favor of this hypothesis. In section 5.1, I approach the data in a more abstract manner. Adopting certain constraints, I provide a list of all logically conceivable determiner forms. I briefly discuss potentially possible yet unattested determiner systems and formulate two diagnostics for the parsing of the inner structure of determiners. Section 5.2 discusses systematic gaps from the perspective of this paper.

5.1. Logically Conceivable Forms.

Hypothesis 1 states that every Germanic language has at least one article and at least one demonstrative that share a definiteness marker (a dental sound or *h*-). To capture the semantic and phonological differences between articles and demonstratives, I have proposed that the latter contained a deictic element. This deictic element has been argued to involve an abstract head in the syntax that is filled by subsequent vocabulary insertion. Exemplifying with German, I have made the distinction between bound morphemes (-*ies*-) and free morphemes (*jen*-). In conjunction with *d*-support, the former accounted for the essence of hypothesis 1.

To identify gaps in the data, I propose to make the structural patterns of the definite determiners more abstract. I use the following notation: *D*-

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for a shared support element (for example, *d-*), (Ir-)RegInfl for (ir-) regular inflection, Ø for a segmentally present but overtly unrealized element, X for a putative third syntactic head in the demonstrative structure, Y for a bound morpheme (for instance, *-ies-*), and Z for a free morpheme (for example, *jen-*). Unattested but potentially possible combinations of an article and demonstrative are designated by ??; unattested and, by hypothesis, impossible combinations are marked by *.

Consider 99 and 100: The former shows the combinations of an article with regular inflection, and the latter contains the combinations of an article with irregular endings. For clarity, one concrete example is provided for each of the attested types of determiners. Abstracting away from unrelated article forms, one obtains the following logically conceivable options:[60]

(99)

ARTICLE			DEMONSTRATIVE[61]	
D-RegInfl	a.		*D*-Ø-RegInfl	(Ge: *dér*)
(Ge: *der*)	b.		*D*-Y-RegInfl	(Ge: *dieser*)
	c.	*	X-Y-RegInfl	
	d.		Z-RegInfl	(Ge: *jener*)
	e.	??	*D*-Ø+IrregInfl	
	f.	??	*D*-Y+IrregInfl	
	g.	*	X-Y+IrregInfl[62]	
	h.		Z+IrregInfl	(Ic: *sá*)

[60] Recall that unrelated article forms do not entail the presence of unrelated demonstratives. Above, I proposed that unrelated articles involve the insertion of free morphemes under Infl_N. Recall also that the Romance languages have unrelated determiner forms across the board. As such, they do not appear in 99 or 100.

[61] Option a is also found in Icelandic, Pennsylvania German, and Yiddish. With respect to option b, as pointed out in Wiener 1893:66, Lithuanian Yiddish has *dizer* 'this'. Option d is also found in Pennsylvania German and Yiddish.

[62] Recalling that *h-* is the relevant support element, one might think that Icelandic *þ-ess-a* instantiates such a sequence. However, Icelandic also has demonstrative forms such as *þ-enn-an* and *þ-ett-a* in the same paradigm where the three different elements realizing Y (*-ess-*, *-enn-*, *-ett-*) are, most likely, not related phonologically.

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(100)	ARTICLE			DEMONSTRATIVE	
	D-IrregInfl	a.	??	*D*-Ø-RegInfl	
	(En: *the*)	b.	??	*D*-Y-RegInfl	
		c.	*	X-Y-RegInfl	
		d.	??	Z-RegInfl	
		e.		*D*-Ø+IrregInfl	(En: *this*)[63]
		f.		*D*-Y+IrregInfl[64]	
		g.	*	X-Y+IrregInfl	
		h.	??	Z+IrregInfl	

Before discussing these combinations in some detail, I step back for a moment and recast the above proposal in more general terms.

If articles involve one head in the syntax and demonstratives involve two, one can formulate two diagnostics that help parse these (and other) determiners with regard to their inner makeup. Starting with definite articles, if these elements exhibit regular inflection, then one can infer that the other part, if present, must be a dummy. Since inflections are bound morphemes, this dummy must be a support element. In other words, to the extent that the one-headed structure of articles is correct, one has a means to parse the inner structure of articles. Note that articles with irregular endings can only be parsed when compared to the other definite determiners (for example, by ascertaining that other determiners share the definiteness marker).

Turning to demonstratives, these elements involve two heads in the syntax, a deictic one and an inflectional one. I argue in the next subsection that the c-examples and g-examples in 99 and 100 above are systematic gaps. As for the remaining combinations in 99 and 100, the fully transparent forms are derived by inserting bound morphemes in the a- and b-examples, and free morphemes in the d-examples. The partially transparent forms in the e- and f-examples follow from the assumption that Fusion welds together the two syntactic heads. Fusion is marked by a plus sign in 99 and 100. The resultant head is filled by a bound

[63] Also: Danish, Dutch, Frisian, Norwegian, Swedish, West Jutlandic and, with some qualification, Afrikaans

[64] I show below that both 100f and 100e undergo Fusion; that is, they have the same account. As such, the languages in 100e could also be put in 100f.

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morpheme supported later by the relevant definiteness marker. Finally, the opaque, nonparsable forms in the h-examples are derived by Fusion and the insertion of free morphemes.

What the e-, f- and h-examples have in common is the presence of irregular inflection that was derived by Fusion of the deictic and inflectional heads. If so, one can infer from irregular endings on demonstratives that Fusion is at play, which results in one head. If another component is present, that component must be a support element. To avoid an *ad hoc* claim, one should find evidence that this dummy is present elsewhere in the language (for example, on articles).

To sum up, given the proposed determiner structures, one has arrived at two diagnostics for parsing the inner makeup of definite determiners:[65]

(101) *Diagnostics for Parsing Determiners*

(a) Regular inflection on articles -> Identification of support elements

(b) Irregular endings on demonstratives -> Identification of Fusion -> Identification of support elements

Formulating these diagnostics in very general terms, I mean for them to be applicable beyond the languages discussed here (for some cross-linguistic information, see Diessel 1999, Lyons 1999:107, Rijkhoff 2002: 178).

There are many interesting points to discuss with regard to the determiner systems delineated in 99 and 100. This is especially true for

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[65] In section 3.4, I pointed out that English is special in that it has no inflections on adjectives at all. For the definite article, I proposed that no inflection is inserted under $Infl_N$. To make the definiteness feature visible, *the* is inserted. As to the demonstrative, Deic and Infl undergo Fusion and bound morphemes are inserted under the resultant head. Given the current data set, this state of affairs seems to be exceptional, perhaps due to special circumstances in the history of the language (note 43). If this option turns out to be more general, one could formulate a third diagnostic:

(i) No inflection on adjectives -> no inflection is under $Infl_N$, and demonstratives have irregular endings

For the last part of this potential diagnostic (that is, irregular endings on demonstratives), see the diagnostic in 101b.

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the potentially existing yet unattested systems marked by ??. For considerations of space, I do not investigate all these combinations here in detail. To discuss just one case briefly: Icelandic is interesting in that it has related stem forms with regular inflections, as shown in 102a,b. The unrelated stem forms have irregular endings, as shown in 102c.

(102) a.	ART	*D*-RegInfl:	(h)-inn	(Icelandic)
b.	DEM	*D*-Ø-RegInfl:	hinn	
c.	DEM	Z+IrregInfl:	sá, þessi	

Logically speaking, it is possible to conceive of a system that has related stems with irregular endings, as in 103a,b, and unrelated stems with regular inflections, as in 103c. I label this imaginary language Icelandic2, and the forms are exemplified by a combination of English and German determiners.

(103) a.	ART	*D*-IrregInfl:	the	(Icelandic2)
b.	DEM	*D*-Ø+IrregInfl:	this	
c.	DEM	Z-RegInfl:	jener	

Although I currently know of no such language, I believe Icelandic2 is possible. Note first that the determiners of Icelandic2 are structurally compatible with the current analysis. As for the concrete inner makeup, this language would be similar to English with two qualifications: Adjectives have inflections and the distal demonstrative *that* is replaced by a German-type demonstrative. To be clear, while this system does not exist in Germanic, nothing in the current proposal militates against the existence of this type of determiner system in principle. As such, I take this and the other potential determiner systems as accidental gaps in the data. More relevant for current purposes, I discuss systematic gaps in the next subsection.

5.2. Demonstratives with Three Syntactic Components.
If demonstratives involve only two heads in the syntax and *D*- is the only element inserted late, then all combinations of fully transparent X-Y-RegInfl or partially transparent X-Y+IrregInfl are expected to be nonexistent, provided there is indeed evidence that X stands for a syntactic head. The relevant cases are repeated here for convenience:

(99c)	*	*D*-RegInfl	-	X-Y-RegInfl
(99g)	*	*D*-RegInfl	-	X-Y+IrregInfl
(100c)	*	*D*-IrregInfl	-	X-Y-RegInfl
(100g)	*	*D*-IrregInfl	-	X-Y+IrregInfl

As far as I can tell, these are indeed systematic gaps. This is predicted by the current analysis. In simplified terms, the present proposal claims that X is too "many" in that this contentful element cannot be accommodated by the two-headed demonstrative structure. Note that the hypothesized parallelism between demonstratives and adjectives provides a natural motivation for this gap as both elements involve extended projections built from one contentful root element: the deictic part and the adjective stem. Below, I argue against a three-headed structure more directly.

Earlier work on this topic proposed a variety of analyses in terms of three-headed structures (for instance, Leu 2008, Roehrs 2010). In that vein, one could claim that German *dieser* 'this' has three heads where the ending involves the head of an Inflectional Phrase (InflP), the deictic element instantiates the head of a Deictic Phrase (DeicP), and the definiteness marker is interpreted as the head of—what one might call—a Referential Phrase (RefP) (see Longobardi 1994):

(104)	Infl	Deic	Ref	
dieser:	-er	-ies-	d-	(German)

Combining these elements by head movement, this alternative is similar to the current proposal with the difference being that the definiteness marker is taken to indicate a syntactic head. Turning to some distal demonstratives, the case of German *jener*, Yiddish *yener*, and Pennsylvania German *seller* seem less straightforward at first glance. Parsing *jener* and the other two elements as in 105 does not seem revealing; that is, I am not aware of any evidence that *j/y/s* play a role as referential parts somewhere else in the determiner system, or that *n/n/ll* play a role as deictic parts somewhere else in the deictic system:[66]

[66] As seen above, this is different for the demonstrative stem *dies-*, where synchronically *d-* occurs in numerous elements (*dortiger* 'there', *dann* 'then', etc., see Klinge 2008; for English, see Bernstein 2008) and *-ies* is arguably part of *hiesiger* 'local' (Leu 2008:36 reporting a personal communication by Henk

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(105)	Infl	Deic	Ref	
jener:	-er	-(e)n	j(e)-	(German)
yener:	-er	-(e)n	y(e)-	(Yiddish)
seller:	-er	-(e)ll	s(e)-	(Pennsylvania German)

Rather, *jen-*, *yen-*, and *sell-* seem to be unanalyzed, opaque stems. Taking the inflection into account, there seem to be two components. Proponents of an analysis in terms of a three-headed structure could propose that the Deic-head and the Ref-head in 105 undergo Fusion. As to the definite article, these scholars would then claim that German *der* 'the' involves two heads (Infl, Ref) and West Jutlandic *æ* involves Fusion of these two heads. To be clear, on this alternative analysis, the definiteness marker instantiates a syntactic head (see Leu 2008, Roehrs 2010). As a consequence, definite articles involve two heads in the syntax, demonstratives involve three, and Fusion is extended to opaque article forms and to more demonstrative forms.

As far as I can see, most of the discussion in sections 3 and 4 can also be captured by this more elaborate structural analysis. However, there are also some differences between the two proposals: theory-internal, acquisitional, and empirical. Focusing the discussion on demonstratives, all of the following points speak unanimously in favor of the analysis of demonstratives as two-headed structures.

Starting with a theory-internal argument, recall that I have explained irregular endings on demonstratives by Fusion, which applies to two heads in a sisterhood relation. Proposing a three-headed structure, one faces the following problem: After head movement, only two heads (out of the three) are in a sisterhood relation under standard binary branching. In order to explain the irregular forms in Icelandic, one would have to make additional assumptions: Either one would have to give up the sisterhood relation, or one would have to postulate that Fusion can recur. The current proposal fares better in this regard.

In section 3, I showed that the definiteness marker is special and proposed that it is not part of the syntax. Proponents of a three-headed structure could accept this argumentation. However, this comes at a

van Riemsdijk). Diachronically, there is evidence that *-ies* is an independent element in that it developed from the deictic particle *si* in the Older North and West Germanic languages (for a detailed discussion, see section 4.2).

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price. An analysis in terms of a three-headed structure would have to posit that simple demonstratives consist of two segmentally unrealized elements, *dér* 'that': *Ø-Ø-r*. Recall that one of these segmentally unrealized heads was motivated by the observation that demonstratives—complex or simple—are stressed, with the abstract deictic feature, segmentally realized (*-ies-*) or not (*-Ø-*), attracting stress. To make a strong case for a second segmentally unrealized head, one should find some good motivating evidence. Until such evidence is found, the assumption of one segmentally unrealized head is, from the perspective of language acquisition, to be preferred over two.

Finally and more importantly, I turn to some empirical considerations. A three-headed structure involves four phrasal positions. Assuming that head movement proceeds all the way to the top, one might expect to find languages where demonstratives can occur with three adverbial elements to their immediate right. As far as I know, this is not the case (although this might be an accidental gap). A second, stronger empirical argument against the three-headed structure can be derived from certain nonexistent demonstrative forms. First, I briefly discuss Germanic and then focus on Romance in more detail.

If one were to suggest that German had a three-headed demonstrative structure after all, then one could expect forms such as X-Deic-Infl or *d*-Deic-X-Infl in German, where X stands for an element other than a dummy. Combinations not entirely implausible are given in 106a. Note that a quantifier can occur with other deictic elements, as shown in 106b.

(106) a. *all-ies-er, *d-ies-all-er
all-DEIC-INFL, D-DEIC-all-INFL
'this (very)'

b. allhie(r), allda/alldort; überall
'in this, that very place'; 'everywhere'

However, the forms in 106a do not exist—either in German or, as far as I know, in any other Germanic language. An analysis in terms of a two-headed structure explains the absence of a third (contentful) component straightforwardly, as a third head is simply not present in the syntax. On the current analysis and abstracting away from reinforcers, only late insertion of a dummy can bring about a third element.

Another empirical argument can be derived from certain cross-linguistic considerations. Specifically, there is potential evidence from the Romance languages that demonstratives may involve three heads, and articles—two. To give this alternative a fair shot, I approach this issue in three different ways. First, I discuss Spanish, then I turn to Sardinian, and finally, I return to Spanish.

To begin, the claim about additional syntactic heads could be made on the basis of the feminine determiner forms in Spanish. At first glance, the demonstratives could be parsed as *e-st-a* 'this', *e-s-a* 'that', *a-quell-a* (or *aque-ll-a*, etc.) 'that' and the article as *l-a*. As pointed out in section 3.1, the demonstratives and articles do not share the same initial elements; that is, they are not morphosyntactically related. These cases then present a first potential counterexample to the claim that demonstratives involve two heads, and articles—just one.

However, the masculine forms cannot be as straightforwardly accounted for in terms of these larger structures. The demonstratives in question are *este*, *ese*, *aquel*, and the article is *el*. Note first that not all these determiners share the same inflection. In fact, the typical gender marker for masculine does not occur on these determiners at all: Neither the demonstratives nor the article end in *-o*.[67] In other words, gender marking on the determiners is, in the case of masculine, exceptional. Just as in the case discussed above, proponents of a three-headed structure could claim that the inflectional head has undergone Fusion with another head, thereby maintaining the larger structures. Put simply, the resulting structures could look as follows (Fusion of the two relevant heads is marked by curly brackets): *e-*{*ste*}, *e-*{*se*}, *a-*{*quel*}, and {*el*}. In conjunction with Fusion, the account in terms of three syntactic heads yields demonstratives with two stem forms: *e-* and *a-*.

Notice though that this analysis has to find a way to rule out the ungrammatical combinations where the fused heads co-occur with another stem form: **a-*{*ste*}, **a-*{*se*}, and **e-*{*quel*} (similar problems

[67] Importantly, *lo* and *esto* do exist, but their use is special. As Green (1988:94–95) states, these forms are traditionally called "neuter", where *lo* represents a Spanish innovation, but *esto* derives from the Latin neuter demonstrative. He claims that *lo* functions as a [-COUNT] marker in certain nominalizations (see also Kester 1996:252–253) and *esto* is used as an anaphor for sentences or propositions.

arise under the alternative parse *aque-ll-a*, etc.). Note that one cannot claim that *e-* and *a-* are only compatible with certain deictic values: *e-* is part of the proximal and one of the distal demonstratives. These issues disappear if one abandons the larger structures and maintains that the underlying structure of demonstratives and articles in the Romance languages is the same as the structure of their Germanic counterparts, with the demonstratives having two heads, and the article—just one.[68] Before I tackle the Spanish data from a different perspective, I briefly turn to Sardinian.

As far as I know, Sardinian is the only Romance language that has completely regular inflections on the definite determiners when compared to adjectives. The latter is exemplified in 107 by the word *beautiful*. Just as in German, in Sardinian these are fully transparent elements. Unlike their Germanic counterparts, the article and the demonstratives have different initial elements, *s-* versus *ku-*.[69]

(107)

ART	DEM	DEM	ADJ	
s-u	ku-st-u	ku-ss-u/ku-dd-u	bell-u	(Sardinian)
s-a	ku-st-a	ku-ss-a/ku-dd-a	bell-a	

To make this language fit into the current proposal one could claim that Sardinian is the only Romance language that has bound morphemes,

[68] Harris (1991:41–42) also calls these determiner forms "special cases." He provides an analysis for the article *el* suggesting that *e-* is an epenthetic vowel (pp. 54–55). However, it is not entirely clear to me how the form of the demonstrative is explained (note that the "word marker template" in 37 of that paper only applies to nouns, adjectives, and adverbs). Notice though that Harris could claim that demonstratives are like adjectives (just as I have claimed in section 3). While his template would now apply, this extension does not account for the fact that unlike adjectives (see the data in 9 of his paper), demonstratives have coexisting forms ending in *-e* and *-o*. Finally, note that Harris' language-specific explanation for the article cannot extend to the other articles in Romance.

[69] There is diachronic evidence for a tripartite structure of demonstratives. Vincent (1997:158) states that the demonstratives developed from three elements (for example, *kustu* < *eccu-ist-um*). Note though that *eccu* was a reinforcer similar to Old Germanic *si*. Roehrs (2010) argues that reinforcers are in specifier positions, at least at the beginning (see section 4.2).

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which makes it similar to the Germanic languages. Unlike Germanic support elements, the support elements in Sardinian would be sensitive to their contexts of insertion, such that *s-* is inserted before the inflection in Infl_N and *ku-* is inserted before the deictic element. This may turn out to be an ad hoc solution. Note, though, that there are other ways to explain away this potential counterexample. Pending an indepth analysis, I leave the discussion of Sardinian and return to Spanish.

A reviewer asks what a language would have to look like so that it cannot be captured by the current system at all. In other words, the reviewer wonders if the main hypothesis about the syntactic structure is falsifiable. I believe the answer to this question is affirmative. Returning to the issue of an analysis in terms of three syntactic heads, Romance demonstratives are traditionally presented by reference to three grammatical persons essentially making demonstratives parallel to personal pronouns. Exemplifying with Spanish again, the tripartite system is organized as follows:

(108) a. esta — 1st person (near the speaker: 'this') (Spanish)
b. esa — 2nd person (near the addressee: 'that')
c. aquella — 3rd person (near neither speaker nor addressee: 'that')

I propose to capture closeness to the speaker by [+SPEAKER], closeness to the addressee by [+ADDRESSEE], and remoteness by a negative value of these features. Employing these two binary features, one could suggest that each binary feature is located under one head. If so, one essentially splits the above Deic-head in two, which results in the following three-headed structure: Deic1-Deic2-Infl. There are two options: Either Deic1 could host the feature [±SPEAKER] and Deic2 could host [±ADDRESSEE], or Deic1 could involve [±ADDRESSEE] and Deic2—[±SPEAKER]. The analysis of the demonstratives can now be updated as follows:[70]

[70] A general proximal demonstrative would combine the positive features of the first and second person demonstrative (that is, [+SPEAKER, +ADDRESSEE]). Vincent (1988:53) points out that Gallo-Romance, Rhaeto-Romance, and Balkan Romance have bipartite demonstrative systems. Note that given these two binary features, one might expect a quadripartite system in some languages. I am not aware of the existence of such a system. However, a tripartite system as discussed in the main text is enough to make the relevant point.

(109) a. [+SPEAKER, –ADDRESSEE]: e-st-o (Spanish)
b. [–SPEAKER, +ADDRESSEE]: e-s-o
c. [–SPEAKER, –ADDRESSEE]: a-quell-o

Note though that some exponents (for example, *e-*) are not consistently employed to make certain features visible, and conversely, some features (for example, [–ADDRESSEE]) are not consistently made visible by specific exponents. Recall also that the inflection *-o* on demonstratives has a special status and is not the result of an agreement relation with another element in the masculine gender. To be clear, then, Spanish cannot straightforwardly be analyzed in this way. This is consistent with the discussion above. However, such languages are easily conceivable.

To make a strong case for an approach that involves three heads, I discuss two constructed cases. These imaginary languages are labeled Spanish2 and Spanish3, and their demonstratives appear in capital letters:

(110)

	Spanish2	Spanish3
a. [+SPEAKER, –ADDRESSEE]:	E-ST-O	E-ST-O
b. [–SPEAKER, +ADDRESSEE]:	A-S-O	A-S-O
c. [–SPEAKER, –ADDRESSEE]:	A-ST-O	E-S-O

Beginning with Spanish2, the first element (that is, *E* versus *A*) realizes the feature [SPEAKER] and the second element (that is, *ST* versus *S*) involves [ADDRESSEE]. As for Spanish3, the first element realizes the feature [ADDRESSEE] and the second element—[SPEAKER]. Now, both Spanish2 and Spanish3 would make a strong case for an analysis in terms of three heads provided that the inflection *-O* is a regular exponent of some morphosyntactic feature, and that none of the two Deic-heads turns out to be an expletive/dummy element (inserted after syntax).

While I know of no such language in Germanic, Romance, or in general, it remains to be seen if such a language exists. I believe not (for some potentially challenging data, see Diessel 1999). However, if such a language can indeed be discovered, the current proposal that involves two heads would have to be expanded to accommodate a third head. Now, while a number of motivating assumptions would have to be rethought, I believe that many points of this paper would still carry over assuming that languages simply differ in the way they encode deixis in the syntax; that is, either a deictic head is unsplit, as in Germanic and

Romance, or it is split in two, as in the other (as yet undiscovered) type of language. A technical way to capture such a difference is proposed by Bobaljik & Thráinsson (1998), who discuss different inflectional systems in the sentential domain in Germanic.

To sum up this section, I have approached the empirical domain under discussion in more abstract terms. On the one hand, this allowed me to identify gaps in the data; on the other, I could formulate two diagnostics for the parsing of the makeup of determiners across languages. In the second part of this section, I argued directly against a structural analysis of demonstratives that posits three heads.

6. Extensions of the Current Proposal.

Thus far, this paper has only discussed definite determiners, that is, definite articles and demonstratives. Following the methodology in Klinge 2008 and Leu 2008, I now sketch how the current proposal can be extended to some other determiner forms, both transitive and intransitive. As usual, I keep traditional terminology.

6.1. Other Types of Determiners.

In this subsection, I extend the discussion of definite articles to their indefinite counterparts, and the analysis of demonstratives—to question words, often referred to as *WH*-ELEMENTS. Like the definite determiners, indefinite articles and *wh*-elements both involve an inflection. To sidestep the issue of certain irregular forms of *ein* 'a', I illustrate this with a masculine accusative example:

(111) a. d-en / ein-en Mann (German)
the-INFL / a-INFL man

b. jen-en / welch-en Mann
that-INFL/ which-INFL man

Putting special cases such as *manch ein* 'some' or *irgendein* 'any' aside, the definite and indefinite articles both consist of two components at most: an inflection, and either the definiteness marker or *ein*. Interestingly, there is evidence that like the definiteness marker, *ein* is also semantically vacuous. This becomes evident with predicates involving kind nouns where *ein* makes no independent semantic contribution, as

shown in 112a. Turning to *wh*-elements, one can point out that like demonstratives, they can be modified, as shown in 112b.[71]

(112) a. Er ist ein Idiot.
he is an idiot
'He is an idiot.'

b. wer genau
who exactly

A second similarity between demonstratives and *wh*-elements is semantic. I have shown above that different demonstrative stems are tied to different semantics (for example, *dieser* 'this' versus *dér* 'that'). The same basic point can be made for *wh*-elements: *welcher* 'which' versus *wer* 'who'. Given this initial list of commonalities, I hypothesize that indefinite articles are structurally similar to definite articles and *wh*-elements are structurally parallel to demonstratives.

In section 3.2, I followed Roehrs 2009 and Schoorlemmer 2012 in assuming that the [DEF] feature is base-generated low in the structure. Consider 113a. After movement to Infl_NP, [DEF] is made visible by the inflectional suffix supported by the definiteness marker. I propose something similar for the indefinite article. Following de Swart et al. 2007, kind nouns require the presence of a realization operator (REL). Specifically, REL maps kind nouns to sets of entities, which allows them to function as predicates. This operator is assumed to be in Num, as shown in 113b. I assume that as an operator REL moves to Infl_NP. De Swart et al. propose that this operator is made visible by the indefinite article. Slightly diverging from them, I propose that this is achieved by the inflectional suffix supported by *ein*.

(113)

	[Infl_N	Def	Num	N]
a. *den* 'the':	-en	[DEF]		
b. *einen* 'a':	-en		REL	

[71] Consider in this regard English forms such as *whichever*.

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To be clear, one arrives at the simplified representations in 113 that form the basis for parallel derivations of the definite and the indefinite articles.

Turning to demonstratives and *wh*-elements, these items also involve operators, and I assume they also surface in $Infl_NP$. As to their internal structure, I propose that *wh*-elements also involve an extended projection closed off by the inflection. Compare 114a to 114b.

(114)

	[Infl	Stem]
a. *jenen* 'that':	-en	jen-
b. *welchen* 'which':	-en	welch-

Again, just as the proposal respecting definite articles extends to indefinite articles, the current proposal respecting demonstratives extends straightforwardly to *wh*-elements. In other words, the current analysis can be generalized to cover a larger empirical territory. I take this to be a good indication that the current proposal is on the right track. Finally, I briefly address how personal pronouns and intransitive determiners relate to the transitive determiners discussed so far.

6.2. *Personal Pronouns and Intransitive Demonstratives.*
I start with the often-made observation that personal pronouns are very similar to determiners (Postal 1966). This resemblance can easily be seen in Spanish, where some personal pronouns are basically identical to the definite articles: *él* 'he/it' versus *el libro* 'the book'. Turning to German, it is well known that 3rd person pronouns share the same inflections as determiners. Consider the juxtaposed forms in table 4, where the personal pronoun precedes the determiner (I give more details below).

	Masculine	**Neuter**	**Feminine**	**Plural**
Nom.	er / der	es / das	sie / die	sie / die
Acc.	ihn / den	es / das	sie / die	sie / die
Dat.	ihm / dem	ihm / dem	ihr / der	ihn-en/den-en
Gen.	(seiner)/dess-en	(seiner)/dess-en	(ihrer)/der-en	(ihrer)/der-en

Table 4. 3rd person pronouns and determiners in German.

However, personal pronouns seem to behave more like demonstratives than articles with regard to at least two coinciding properties:

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transitivity and form (see also Harbert 2007:177). First, personal pronouns are intransitive in that they cannot occur with an overt noun, as shown in 115a. Interestingly, demonstratives have two forms in the dative plural (and all the genitive instances), where the intransitive version has the additional ending *-en*, as shown in 115b. In contrast, the transitive version or the definite article does not, as shown in 115c.

(115) a. mit ihnen (*Leuten) (German)
with them people

b. mit denen (*Leuten)
with those people

c. mit den *(Leuten)
with the/those people

Intransitivity coincides with form. Comparing the personal pronoun *ihnen* in 115a to the accusative masculine forms *ihn* and *den* in table 4, one observes that just like the intransitive demonstrative in 15b, this pronoun also has an additional *-en*. In fact, there is diachronic evidence that *-en* has been added. This can be gleaned from the fact that MHG had *in* and *dën* as personal pronoun and demonstrative form, respectively, in the dative plural. This additional *-en* in 115a,b and the other cases is separated by hyphen in table 4.[72] To conclude, personal pronouns in German pattern with intransitive demonstratives both in terms of their intransitivity (no co-occurring noun) and their form (presence of an additional *-en* in some instances).

However, there are also some important differences between personal pronouns and demonstratives. To name just two, in contrast to demonstratives, 3rd person pronouns have three different initial elements (*e-*, *s-*, *ih-*) in one and the same paradigm. In this regard, observe also the difference in the vowel between the neuter forms of the pronoun *es* and the demonstrative *dás*. Second, unlike the genitive of demonstratives, the genitive of the personal pronouns is stylistically marked in that it only

[72] The second *-s-* in the demonstrative forms of the masculine/neuter genitive reflects the fact that the pronunciation of the stem vowel is the same as in the transitive counterparts.

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occurs in a very elevated and poetic style. These forms are put in parentheses in table 4.

While an in-depth investigation of these differences goes beyond the scope of this article, I show how personal pronouns and intranstitive demonstratives fit into the current system. The similarities with regard to inflection can be accounted for by extending the basic demonstrative structure from above to these cases. To capture the semantic differences, I propose, for simplicity's sake, to replace the Deic-head by another head that hosts its own feature. I label the head Ana(phoric). Consider 116a. The differences in terms of stem form can be accounted for by assuming that the three initial elements of the personal pronouns (*e-*, *s-*, *ih-*) are inserted by vocabulary insertion. After head movement and vocabulary insertion, one obtains the forms in 116. To be clear, the derivation of *es* 'it' is similar to that of demonstratives such as *jenes* 'that'.

(116) a. *es* 'it': $[_{\text{InflP}} \quad e_i\text{-}s \; [_{\text{AnaP}} \; t_i \;]]$
b. *dás* 'that': $[_{\text{InflP}} \quad \emptyset_i\text{-}s \; [_{\text{DeicP}} \; t_i \;]]$
c. *jenes* 'that': $[_{\text{InflP}} \; jen_i\text{-}s \; [_{\text{DeicP}} \; t_i \;]]$

To finalize the derivations, the additional mechanism of *d*-support applies to the form in 116b, and 116c involves schwa-epenthesis.

The difference with regard to transitivity is derived by embedding InflP in 116a inside a larger noun phrase structure. Now, similarly to the structure of transitive determiners above, the personal pronoun structure surfaces in Spec,InflP_N. Unlike transitive determiners, personal pronouns have the noun position occupied by another element, the additional *-en*. This blocks the appearance of an overt noun:[73]

[73] Admittedly, the suggestion to put the additional *-en* under N is not completely straightforward here (or in Wiltschko 1998, see note 74). Alternatively, one could follow ideas in Corver & van Koppen 2011 and suggest that *-en* is a category-defining head (n) that turns an unspecified root into a noun. On both analyses, personal pronouns have a noun as part of their structure in the current paper. That this idea is not implausible is confirmed by the fact that non-3rd person pronouns can take overt nouns (for instance, *ihr Linguisten* 'you linguists', see Postal 1966, more recently Déchaine & Wiltschko 2002:421 and Roehrs 2005, among many others). I leave the choice between the two analytical options of *-en* open here.

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(117) a. *ihnen* 'them': $[_{\text{InflP/N}}$ [*ih-n*] Infl_{N} $[_{\text{NP}}$ *-en*]]
b. *denen* 'those': $[_{\text{InflP/N}}$ [*Ø-n*] Infl_{N} $[_{\text{NP}}$ *-en*]]

For intransitive elements without another overt element (for example, *es* 'it'), one has to assume a null element in N.[74] Note also that the structural

[74] A reviewer points out that Wiltschko (1998) provides a different analysis of these elements requesting that her proposal be discussed in more detail. Note, first of all, that Wiltschko's proposal and the current paper pursue different goals. On the one hand, Wiltschko discusses differences between *d*-determiners and personal pronouns with the goal to illuminate the nature of relative pronouns beginning in *d*-. Empirically, she mainly discusses German. On the other hand, the current paper provides a detailed analysis of the inner structure of transitive definite determiners (articles and demonstrative) across the Germanic languages trying to cast some light on the nature of the definiteness marker and inflectional morphology. Given the different theoretical interests and intended empirical coverage of the two papers, a comparison is not straightforward. Thus, while I cannot do full justice to all the aspects of Wiltscho's interesting proposal, I can show where the two papers differ in significant ways.

Wiltschko proposes that personal pronouns are the spell-out forms of AgrD (note that later in her paper, AgrDP is fleshed out as consisting of PersP and NumP). These elements have a structure different from full DPs. Considering i, pronouns as in ia–c lack DP and NP. In contrast, noun phrases as in id involve an additional DP and NP, where NP is suggested to be formally licensed by the presence of D. With *d* in DP licensing the presence of NP, this structural difference allows the author to explain the fact that *d*-relative pronouns are similar to *d*-determiners but not personal pronouns (for details, see Wiltschko 1998). This is a nice achievement. Note that the additional *-en* discussed in the main text is placed under Num, as in ib. It should also be pointed out that personal pronouns do not have a uniform structure: Σ_NP in ic is located between DP and PersP. The special status of *s-* is diachronically motivated (see note 52 above):

(i) a. *er* 'he': $[_{\text{PersP}}$ *er* $[_{\text{NumP}}$]]
b. *ihnen* 'them': $[_{\text{PersP}}$ *ihn* $[_{\text{NumP}}$ *en*]]
c. *sie* 'she/they': $[_{\Sigma N\text{P}}$ *s* $[_{\text{PersP}}$ *ie* $[_{\text{NumP}}$]]]
d. *der Mann* 'the man': $[_{\text{DP}}$ *d* $[_{\text{PersP}}$ *er* $[_{\text{NumP}}$ $[_{\text{NP}}$ *Mann*]]]]

There are some other issues worth taking note of in the context of the present paper.

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analysis in 117 fits well with the fact that personal pronouns and demonstratives function as arguments. At least in their base-generated position, these arguments appear in phrasal positions where they receive a theta role. More generally, intransitive elements such as personal pronouns and certain cases of demonstratives find a straightforward account in the current proposal.

To sum up this section, I have briefly sketched how the current proposal can be generalized to cover more empirical ground. Specifically, I have discussed indefinite articles and *wh*-elements. Finally, I have discussed intransitive elements such as personal pronouns and certain demonstratives and how they fit into the current analysis.

7. Conclusion.

In providing a fairly comprehensive survey of definite determiners in the Germanic languages the main goal of this paper was to illuminate the nature of the definiteness marker and the inflection, and to identify some consequences for the syntax of the noun phrase as a whole. Employing a segmentation approach, I started with easily parsable determiners. I formulated the hypothesis that all Germanic languages have at least one definite article and at least one demonstrative that share the definiteness marker. In addition, German-type languages have regular inflections if compared to adjectives. This complete isomorphism is obscured by a few unrelated stem forms and determiners with irregular endings. These points of variation can be present independently but also in tandem: A given language can have related or unrelated stem forms (English versus French), it can have determiners with regular inflections or irregular endings (German versus English), or a combination of these characteristics (Icelandic).

If I understand Wiltschko 1998:150 correctly, the different vowels in *das* 'the/that' versus *es* 'it' and *den* 'the/that' versus *ihn* 'him' are taken to be differences in spelling. Furthermore, her paper does not state how the semantic difference between articles and (homophonous) demonstratives is derived. Note in this regard that *dies-* is treated as a noncomposed form (presumably under D). Finally, putting aside genitives, which have their own licensing conditions (for example, Wiltschko 1998), observe that the *-en* in the dative plural in ib is not a regular plural inflection (see *den Männer-n* 'to.the men-*n*'). In fact, it is not even possible on the other plural forms of the personal pronouns: *sie(*n)*. As pointed out in note 73, this additional *-en* seems to be a different type of element.

As part of this discussion, I addressed another typological difference between the Germanic and the Romance languages. Crucially, all and only the Romance languages have determiner systems where articles and demonstratives do not exhibit related stem forms at all. The following chart summarizes these two basic determiner systems—the Germanic and the Romance ones—where *d*-determiners, and in Icelandic also *h*-determiner, represent related stem forms; the remaining determiners are unrelated:

	demonstrative	*d*-dem	*d*-dem dem	*d*-dem *d*-dem	*h*-dem dem dem	*d*-dem *d*-dem dem
article	Romance					
d-art or *h*-art		Afrik.	Yiddish	Danish, English, Norweg., Swedish	Iceland.	German
d-art, art		West Jutland.	Pennsyl. German	Dutch, Frisian		

Table 5. Definite determiner systems.

Arguing that the definiteness marker is semantically vacuous, I proposed that articles involve one head in the syntax, and demonstratives—two. While both determiners contain an inflectional head, the demonstrative has an additional deictic head. Assuming that the feature under the Deic-head attracts stress, I explained the different semantics and stress patterns between articles and demonstratives. A number of structural assumptions and operations from the literature were employed in new empirical contexts.

Specifically, I demonstrated that determiners and adjectives show a number of similar properties. I proposed that determiners and adjectives both involve extended projections that are closed off by the inflection. Articles are inflectional heads that close off the extended projection of the head noun, and demonstratives involve inflections that close off the extended projection of a deictic part. The demonstrative structure as a whole is located in the specifier of $Infl_N P$. This proposal has an important consequence: The generalized use of extended projections allows a

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uniform analysis of all these elements by providing a principled account of their similarities. Furthermore, I extended the well-established distinction between bound and free morphemes to determiners. Generalizing *d*-support across all Germanic languages, bound morphemes supported by the definiteness marker derive the related stem forms. The postsyntactic operation Impoverishment accounted for context-specific irregularities, and Fusion explained divergences from transparency throughout the entire paradigm.

The analysis of the synchronic relatedness of definite determiners allowed a straightforward connection to the diachronic relation among these elements. Arguing that deictic adverbials are located in phrasal positions of the demonstrative structure, I proposed that the Spec-Head reanalysis of the old deictic particle *si* yielded the proximal demonstrative. As a consequence of this development, the definiteness marker became a support element. This in turn changed the inner segmentation of the old simple demonstrative and allowed the emergence of the definite article. This led to a reorganization of the definite determiner system. Although definite determiners in North Germanic are of different origins, it was suggested that they do not pose a problem for the current analysis.

The detailed discussion of the inner makeup of definite determiners makes clear predictions about possible and impossible determiner forms. Investigating logically conceivable patterns, I developed two diagnostics for the parsing of determiners: (i) regular inflections on articles indicate the presence/absence of support elements, and (ii) irregular endings on demonstratives indicate the workings of Fusion and the presence/absence of support elements. This paved the way for the discussion of accidental and systematic gaps in the data examined. While some data are potentially possible, albeit as yet unattested, the crosslinguistic existence of demonstratives with three syntactic heads is ruled out by the current proposal. The study of other languages would reveal if this and the other claims above could be maintained.

The final section briefly discussed indefinite articles, *wh*-elements, personal pronouns, and intransitive demonstratives. I showed that these elements find a straightforward account in the current system. I take this as a promising indication that the present proposal can be fruitfully employed beyond the study of the inner makeup of definite articles and demonstratives.

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