

A DEFINITE PROBLEM: THE MORPHOSYNTAX OF DOUBLE DEFINITENESS IN SWEDISH*

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Swedish is well known for the fact that it appears to show two reflexes of definiteness in its definite nominals. The language makes use of a definite article at the beginning of the nominal and a definite suffix on the head noun. There have been a number of approaches to dealing with the distribution of these elements. Some claim that there is but one determiner in the DP structure, but these do not permit an account of how semantic factors influence the independent use of the article and the suffix. Other theories posit more functional material in the nominal, but these do not provide a satisfactory syntactic account for the distribution. The theory I develop here takes the most satisfying elements of each of these kinds of theories and unifies them to produce an approach that can account for the semantic facts and provide a more theoretically sound syntax.

Keywords: Swedish, Nominals, Definiteness, Syntax, Distributed Morphology

1 Basic Facts and Background

Under examination in this paper is DOUBLE DEFINITENESS (alternately DOUBLE DEFINITION), a phenomenon that occurs in some North Germanic languages. In certain structural situations, definiteness is represented by both a preposed definite article, a separate word appearing at the beginning of the nominal, and a definite suffix on the head noun. This is exemplified in the following examples from Swedish and Faroese:

(1) Swedish:

den röda bilen
the red car.DEF

‘the red car’

(2) Faroese:

tann reyða bilurin
the red car.DEF

‘the red car’

Of the five main North Germanic languages, Swedish, Norwegian, and Faroese have double definiteness marking, whereas Danish and Icelandic only have one exponent of definiteness. The contrast is shown by the opposition of Swedish and Danish (Embick and Noyer 2001; Hankamer and Mikkelsen 2005):

(3) Swedish:

- a. *den gamla häst
the old horse
Intended: ‘the old horse’
b. den gamla hästen
the old horse-DEF
‘the old horse’

(4) Danish:

- a. den gamle hest
the old horse
‘the old horse’
b. *den gamle hesten
the old horse-DEF
Intended: ‘the old horse’

*Although the object language has since shifted, the work here was initially inspired by material learned about Faroese while studying at the Faroese Summer Institute in Tórshavn, Faroe Islands, August 2009. The project subsequently grew under the guidance of Jorge Hankamer in the Fall of 2009. Many thanks to Hjalmar P. Petersen, Zakaris Svabo Hansen, Line Mikkelsen, Mark Norris, Anie Thompson, Nico FERIA, Dave Embick, and the participants at the UC Berkeley Syntax Circle for help, discussion, and comments along the way. All errors were produced by the hand of the author.

In the double definiteness-marking languages, definiteness is marked both by a definite article and a definite suffix when a NP is modified by an AP or a relative CP in a definite DP, as the Swedish data show. Danish is different in that the definiteness marking is in complementary distribution—the suffix and the preposed article never occur together.

These facts are very well discussed in the literature (see, for instance, the extensive bibliography in Börjars and Delsing 2008). There appear to be two general threads of thought on how to account for the apparently double distribution of the definite article. On one side there is a single-head analysis, where there is only a single determiner in the underlying structure which imposes the suffix on the head noun of the nominal either by base generation (Delsing 1993) or by some postsyntactic mechanism (Embick and Noyer 2001; Hankamer and Mikkelsen 2005). On the other, there is a dual-head analysis, where two different functional heads expone definiteness or, potentially, component features of definiteness (Santelmann 1993; Julien 2005; Anderssen 2007).

In this paper, I show that both analyses are untenable as currently formulated. I provide data from standard Swedish that show that both the preposed article and definite suffix appear in slightly different semantic circumstances. This indicates that analyses which propose that the suffix is some sort of reflex of the definite article cannot account for the observed differences. At the same time, analyses that posit two functional heads in the DP—one for the article and one for the suffix—require problematic movements or theoretically questionable structures of the type that are argued against in Hankamer and Mikkelsen 2005.

In order to account for the facts in a theoretically motivated way, I follow Hankamer and Mikkelsen (2005) and propose a movement-free analysis with a single functional head in the context of Distributed Morphology (Halle and Marantz 1993), but the account developed here incorporates the two distinct features suggested for Norwegian nominals in Anderssen 2007. I argue that the presence of two features in D is necessary in order to explain the cases where the definite suffix and definite article do not co-occur as typically expected in single feature accounts. For the mechanics of this analysis, I adopt contextually specified vocabulary insertion as a means to account for the distribution of the suffix and the article.

In the course of the discussion, I demonstrate that having two functional heads in the syntax creates a conundrum for determining the spell-out of the definite article in a movement-free system. The adjectival or relative clause modifier, whose presence can trigger double or single definiteness, is essentially invisible to the functional heads in the structure, so there is no immediately obvious way to prevent the two different heads from spelling out when the adjective is not present. Instead, I introduce a more detailed set of contextually specified vocabulary insertions than originally proposed by Hankamer and Mikkelsen (2005). These vocabulary insertions are sensitive to semantic features that reside in the determiner and provide the necessary mechanisms to account for the distribution of the article and suffix.

2 Not-so-Double Definition

In this section I look at data from Swedish and show that double definiteness, when closely analyzed, is not actually double, a note made in previous work such as Julien 2005. As it turns out, the definite article and definite suffix appear to represent different semantic features. The definite article, as I will show, is associated with semantic uniqueness, and the suffix, with discourse familiarity. This can be seen by looking at various places in the language where one or the other fails to occur in some systematic way. Before looking at the data, I will first describe uniqueness and familiarity as they are to be understood. Following this, I show how these notions interact with the morphosyntax of definiteness marking in standard Swedish and how they deviate from what are considered the default examples.

2.1 Uniqueness and Familiarity

2.1.1 Uniqueness

UNIQUENESS is a semantic notion associated with definiteness. When one says that a definite description is unique, they mean that there is an entity in the context that, in the words of Roberts (2003:289), “uniquely satisfies the descriptive content of the definite [nominal].” The basic intuition can be captured with the following examples:

- (5) The boy has blond hair.

The only way for an utterance of (5) to be coherent is for it to be said in the context where there is a single boy. It is easy to show this effect with contrasting examples. When there is more than one boy, (5) will be infelicitous, as in (6):

- (6) Situation: Two boys walk into a room. One has brown hair, and one has blond. A third person sees them walk in and comments:

The boy has blond hair.

The problem here is that the use of the definite article presupposes¹ that there is only one boy. The presence of the other boy in the room makes it such that saying (5) does not make sense in the context. It contrasts notably with the situation given in (7) below:

- (7) Situation: A boy with blond hair and a girl with brown hair both walk into a room. A third person sees them walk in and comments:

The boy has blond hair.

Now that there is only one boy, the third person in the situation may felicitously utter (7). The only difference between (6) and (7) is the number of boys involved in the context. When the number of boys is reduced to one, the utterance becomes felicitous.

The association with definiteness is also fairly easily observed, as the following contrast demonstrates:

- (8) a. The Queen of England is having a bad year. (based on Roberts 2003:290)
b. # A Queen of England is having a bad year.

At any given time, England only has one unique queen, and so (8a) is felicitous precisely because of this. Contrastingly, (8b) is infelicitous because it is common knowledge that England only has one queen. (8b) implies that one out of many queens is having a bad year, but this conflicts with our general knowledge about the world. Following Heim (1982), indefinites are typically used to introduce referents into the context, but since the Queen of England is already generally known and known to be unique, the definite article is used in this situation.

We can see from (8) that world knowledge plays a part in how uniqueness is understood. This interaction can be understood with what Roberts (2003:304) dubs WEAK FAMILIARITY, a number of circumstances under which things in the actual world may come to enter the linguistic context:

¹The discussion of whether or not this is a presupposition is theoretically intriguing but a full exposition of the debate would take this paper too far afield; as a consequence, I will generally follow Roberts (2003) in my assumptions. Rest assured that the answer to this question is not immediately consequential to the analysis to be developed here.

- (9) WEAK FAMILIARITY:
- a. the entity referred to is perceptually accessible to the interlocutors
 - b. the entity referred to is globally familiar in the general culture or at least among the participants in the discourse, although not mentioned in the immediate discourse
 - c. introduction of the DP's discourse referent is licensed solely by contextual existence entailments.
 - d. weak familiarity is guaranteed by giving a functional interpretation to the definite description (which function may have to be accommodated, with the intended argument(s) both familiar and highly salient (Bridging))

As we shall shortly see, these conditions play a role in the definiteness marking paradigm in Swedish. Before this, though, let us turn to another factor that will be relevant for the analysis.

2.1.2 Specificity

Distinct from the notion of uniqueness is SPECIFICITY. Specificity is a topic that has received a great deal of attention in the semantics literature since it seems to cover a number of connected but somewhat distinct concepts (the first paragraph of Enç 1991 is a very succinct summary of the possible analyses).

A full exposition of these distinctions would be inappropriate here, but the term when used in the discussion of definiteness marking in the Scandinavian languages seems to generally be associated with classical analyses of specificity, where a nominal is considered specific when the speaker has an individual referent in mind (sometimes called SPEAKER FAMILIARITY. See Anderssen 2007; Stroh-Wollin 2003).

As we saw above, referents can enter the discourse and become familiar by simply being in the context in which that discourse occurs. However, they may be introduced linguistically as well. This is the notion of discourse familiarity under analysis in Heim 1982 and particularly what Roberts (2003:304) labels STRONG FAMILIARITY.

- (10) STRONG FAMILIARITY: the DP has as antecedent a discourse referent introduced via the utterance of a (usually) preceding DP.

This, along with weak familiarity in (9), classifies all of the ways in which a referent can become familiar. As we will see below, this assumption will be useful for describing the phenomena that we see in Swedish, as there are certain patterns that seem appear to be sensitive to being either strongly or weakly familiar. I will, however, retain use of the term SPECIFIC(ITY), in keeping with previous work on Scandinavian.

2.2 *Typical Definite and Indefinite Nominals*

The typical pattern for definiteness marking in Swedish is given below. Indefinites, as in (11a) and (12a) take no suffix. Definite nominals only appear with a suffix when there is no adjectival modifier, as shown in (11b) and (12b). When there is an adjectival modifier, as in (11c) and (12c), both the article and the suffix co-occur. Adjectives in indefinite DPs appear in the strong inflection and agree in gender with the head noun, whereas in definite environments they appear in the weak inflection.²

²The issue of agreement is relatively marginal for the continuing discussion, but it is worth at least mentioning how the system works. Swedish has two grammatical genders: COMMON, which is the result of the historical collapse of the masculine and feminine genders, and NEUTER. Adjectives agree in definiteness with the nominal in which they occur, which is the basis of the strong/weak difference mentioned above. The STRONG, or indefinite, form of the verb always agrees in gender with the noun phrase it modifies, whereas the WEAK, or definite, form is generally invariant.

- (11) Typical common gender DP:
- | | | | |
|----|--------------------|-----------|----------------------------------|
| a. | en (gammal) | häst | |
| | a (old.STR.COMMON) | horse | |
| | 'a(n old) horse' | | Indefinite |
| b. | häst -en | | |
| | horse -DEF | | |
| | 'the horse' | | Definite w/o Adjectival Modifier |
| c. | den gamla | häst-en | |
| | the old.WK | horse-DEF | |
| | 'the old horse' | | Definite w/ Adjectival Modifier |
- (12) Typical neuter gender DP:
- | | | | |
|----|------------------|-----------|----------------------------------|
| a. | ett (gammalt) | hus | |
| | a (old.STR.NEUT) | house | |
| | 'a(n old) house' | | Indefinite |
| b. | hus -et | | |
| | house -DEF | | |
| | 'the house' | | Definite w/o Adjectival Modifier |
| c. | det gamla | hus-et | |
| | the old.WK | house-DEF | |
| | 'the old house' | | Definite w/ Adjectival Modifier |

2.3 Exceptions

2.3.1 No Definite Article

The material presented in the last subsection is sometimes presented as being unexceptional, but this is assuredly not the case. In certain contexts, the definite article is not required to appear as part of a definite description, and these situations correlate with the uniqueness effect described in §2.1.1. As Delsing (1993:118) writes, "this is possible if the item is well known in the speech situation, by its uniqueness in the world or in a smaller speech community [...] a similar pattern appears where there is a certain adjectives [sic] makes the noun phrase unambiguous in the speech situation." Notice, here, how similar Delsing's description reflects the definition of weak familiarity provided in (9). In their dissertations, Delsing³ and Perridon provide numerous examples of this fact, some of which are provided here:

- (13) No Definite Article (Delsing 1993; Perridon 1989):
- | | | | |
|----|-----------------------------|----|------------------------|
| a. | Ta (den) nya bilen! | c. | (den) vänstra handen |
| | take (the) new car-the | | (the) left hand-the |
| | 'Take the new car!' | | 'the left hand' |
| b. | (den) franska revolutionen | d. | (den) största delen |
| | (the) French revolution-the | | (the) biggest part-the |
| | 'the French revloution' | | 'the biggest part' |

Each of these examples deserves some explanation. (13a) is only felicitous in a context such as where a family has recently bought a new car but has not replaced the old one. In this instance, the adjective *nya*

³Delsing (1993) rarely provides translations of his examples. Consequently, the translations of examples from his dissertation that appear throughout this paper are my own, though I retain his glosses.

is sufficient to disambiguate the family's two cars since they know that there is only one new one. This corresponds to (9a) in Roberts' (2003) taxonomy. In the case of (13b), it is general knowledge that there was only one French revolution, so one does not need the determiner to identify a contextually salient unique revolution, corresponding to (9b). (13c) is similar in that it is general knowledge that people typically only have one left hand, so the adjective *vänstra* sufficiently disambiguates the hand in question from the only alternative—the right hand. Finally in (13d), the modifying adjective is a superlative, which by its very nature restricts the descriptive content of the nominal to a single referent, which fits with (9c). Thus, in all of the places where the nominal has only one contextually salient or sensible referent, the definite article may be dropped.⁴

The above generalization extends from the role the determiner plays in the Swedish DP. As Stroh-Wollin (2003) points out, the definite article in Swedish is used to restrict the set of possible discourse referents to a single element, in line with what Julien (2005) and Anderssen (2007) claim for Norwegian (see §3.2.3, below). In the cases above, it is not necessary to indicate that the DPs have unique referents as this information can be understood from the context. Thus, it is permissible, though not obligatory, to leave out the prenominal determiner in these instances because the information it provides is readily inferred.

2.3.2 No Definite Suffix

When it comes to definite DPs with restrictive relative clauses and superlatives, the definite suffix on the noun is apparently optional (Hankamer and Mikkelsen 2005; Delsing 1993).⁵ Stroh-Wollin (2003:336) notes that there is a semantic distinction between the suffixed and un-suffixed versions of otherwise equivalent DPs. In cases where the DP “does not point to a specific or hypothetically understood referent”, the noun cannot take the definite suffix, as in (14a). This contrasts with examples like (14b) where there is a definite suffix, which can have a previous referent.

(14) Restrictive relative clauses (Stroh-Wollin 2003:335):

- a. det hus som är till salu
 the house that is to sale
 ‘the house that is for sale’
 Might not have an understood discourse referent.
- b. det hus-et som är till salu
 the house-DEF that is to sale
 ‘the house that is for sale’
 Has an understood discourse referent.

This leads to the contrast in (15) below. Stroh-Wollin cites the following examples from Delsing (1993). Example (15b) is bad because there is no specific book that the speaker has in mind when uttering the sentence because it cannot yet be determined which book is being referred to.

⁴This phenomenon is not limited to Swedish within the North-Germanic languages. Faroese, one of the other two languages showing double definition, shows the identical pattern (Petersen 2002; Petersen and Adams 2009). It is common to find examples such as (*tað*) *føroyska mál-ið*, “(the) Faroese language.DEF”. In this case, since it is understood that there is only one Faroese language, the definite article does not have to appear. Julien (2005) and Anderssen (2007) also show the same patterns for Norwegian (to be discussed more below).

⁵Perridon (1989) mentions that it is in fact possible to get definite DPs with superlative adjectives that have neither the definite article nor the definite suffix, but to my knowledge they rarely occur. The theory I develop here will actually be able to handle such cases, but for the sake of a clearer exposition I will ignore this fact.

(15) Restrictive relative clauses (Delsing 1993:119):

- a. Den bok som säljer flest exemplar belönas.
the book that sells most copies is-rewarded
'The book that sells the most examples is awarded a prize.'
- b. * Den boken som säljer flest exemplar belönas.
the book.DEF that sells most copies is-rewarded

As noted above, the same pattern can be observed with superlatives.⁶ As an example, Perridon (1989:219) discusses the examples in (16), which come from a short story. When the author introduces 'the most beautiful place in the world' with (16a), *nejd*, 'place', does not appear with the definite suffix because it is not yet in the discourse. However, subsequent references in the story do indeed show the suffix, as in (16b).

(16) Definite suffixation with superlatives:

- a. Man valde ut ett gosse- och flickebarn som man lät växa upp i den vackraste
One chose out a boy- and girlchild that one let grow up in the most.beautiful
nejd på jorden.
place on earth.DEF
A boy and girl were selected who were allowed to grow up in the most beautiful part of the world.
- b. så låg de under rosenträden i den vackraste nejden på jorden
so lay they under rosetrees.PL in the most.beautiful place.DEF on earth.DEF
So they lay under the rosetrees in the most beautiful part of the world

This data demonstrates that the definite suffix in Swedish has some status in the semantic interpretation. When it is present, the DP must have a discourse referent—that is, it must be either weakly or strongly familiar (as defined in (9) and (10)). Having a discourse referent does not, however, necessitate having the suffix (Delsing 1993). Example (15a) can have previous discourse referents, despite the fact that the definite suffix is not present. Thus, the condition on the use of the suffix seems to be that the referent of the nominal must be found amongst the set of familiar discourse referents (Stroh-Wollin 2003). However, there is no requirement that the suffix be used when there is a discourse referent. Some phrases without it are well-formed, and this is conditioned semantically.

2.4 Discussion

What is clear is that it is not sufficient to say that the definite suffix and the definite article expone identical features, but rather that they represent slightly different semantic information regarding definiteness. This is apparent given the data and observations of the authors referenced in the discussion above and the correlation with weak and strong familiarity defined in §2.1.

The consequence is that the syntax and morphology need to show sensitivity to this information. The optionality of the article is predictable from the discourse structure and certain presuppositional facts (Delsing 1993). The presence of the definite suffix when relative clauses and superlative adjectives modify NP correlate with various facts about familiarity of referents in the discourse (Perridon 1989). Any morphosyntactic account of double definition needs to be able to account for these facts in some principled manner.

⁶Similar patterns are seen in both Norwegian and Faroese, with varying semantic effects. See Anderssen 2007 and Thráinsson, Petersen, Í Lon Jacobsen, and Hansen 2004.

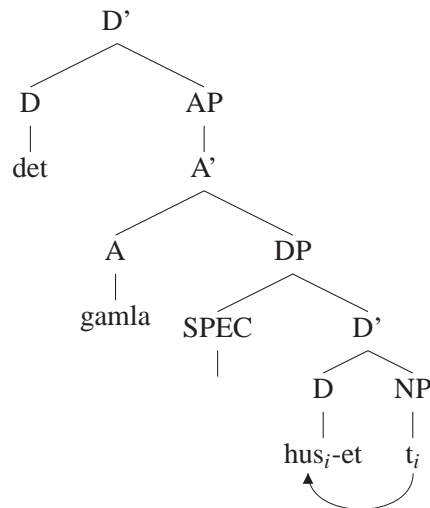
3 Previous Analyses

The literature has yielded several approaches to the structures of nominals in the North Germanic languages. In this section I will summarize those most relevant to the discussion in this paper. I first look at the thread of single-head analyses started by Delsing (1993), and then turn to analyses with two functional heads (Julien 2005; Anderssen 2007). After this, I discuss some of the shortcomings of each approach in light of the data discussed in the last section.

3.1 Single-Head Analyses

The single-head analyses can be traced at least as far back as Delsing (1993). Delsing (1993) specifically argues against a dual head analysis such as the one in (17). The problem he sees here is that such a structure might lead us to expect to see a recursive DP structure. It would predict, he claims, that other determiners should be fine under the adjective, but examples like **den gamle [den snälle man(-nen)]*, ‘the old the nice man(-DEF)’, are never observed in Standard Swedish.⁷

- (17) *det gamla huset*, ‘the old house’ (Delsing 1993:125):



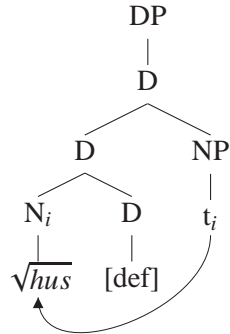
Accordingly, Delsing rejects the notion that there could be two determiner heads in the syntax. He instead proposes a N-to-D raising analysis. This is motivated primarily by Danish, where the definite suffix and definite article are in complementary distribution (recall the data in (4)). Delsing stipulates that N should move to D whenever possible. When N moves to D in Danish, D becomes a suffix to N unless there is an intervening “modifier” which blocks the movement. In this case, the D is spelled out as DEN. For Swedish, Norwegian, and Faroese, however, Delsing must stipulate that the definite suffix can be base-generated, as the intervening modifier does not preclude the presence of the suffix in this language (1993:130).

The account developed by Embick and Noyer (2001) is essentially an extension of Delsing’s analysis, ported into framework of Distributed Morphology (Halle and Marantz 1993, and following). They focus their discussion on Danish and Swedish, trying to account for the (apparent) similarity in the definiteness marking patterns of the languages. Embick and Noyer also specifically say, citing Delsing (1993), that there should only be one D head in the syntax for Swedish, as to admit two would be “to complicate syntax unnecessarily” (2001:581). Following in Delsing’s footsteps, they adopt a N-to-D head movement analysis

⁷It does occur to me, though, that such examples could be prevented, at least in part, through I-selection. Adjectives would simply never subcategorize for the kinds of determiners occurring in preadjectival positions, and the suffix D could only select for NPs. This would probably raise issues for the examples in (15) above, as there is no obligatory AP nor suffix D there. This is a moot point, however, for the structure Delsing assumes here is not well-motivated, as we shall shortly see.

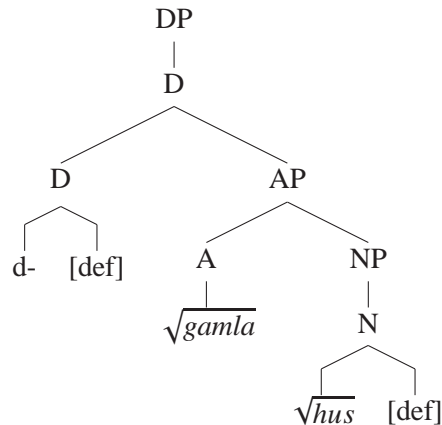
when there is no adjectival modifier. The structure of this is shown in (18). The movement of N to D is to satisfy morphophonological requirements that [D, definite] have a host for its phonological material, and that N expone definiteness.

- (18) N-to-D movement (based on Embick and Noyer 2001):



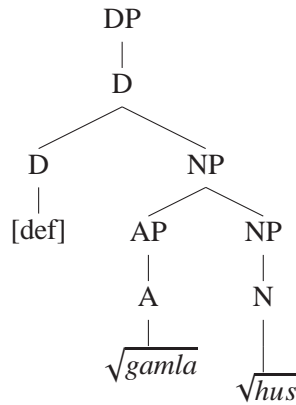
When there is an intervening adjective, it blocks head movement of N to D, and [D, definite] is forced to spell out as *den/det* via a process called *d-* support (Santelmann 1992). This ostensibly post-morphological operation inserts [d] to support the phonological material in D, evidently to explain why the suffix and the article appear to share phonological material (but see the discussion of suffixation versus dissociated morphemes in §4.2 for why this is problematic). In Swedish, the definite suffix is added as a DISSOCIATED MORPHEME to satisfy language specific requirements (Embick and Noyer 2001:581-583). Dissociated morphemes, in their terms, are morphemes that do not have a syntactic projection and are added by rules postsyntactically. They are called “dissociated” because “the information their signalization conveys is partly separated from the original locus of that information in the phrase marker” (2001:558).

- (19) N-to-D movement blocked (based on Embick and Noyer 2001):



Hankamer and Mikkelsen (2005) point out a number of weaknesses in Embick and Noyer’s analysis, some of which stem from Delsing’s original proposal. They note that A cannot block head movement because AP is not an intervening phrase in the nominal structure. Rather, AP is an adjunct to NP, as shown in (20).

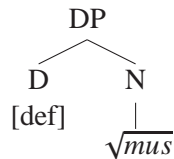
- (20) N-to-D is not really blocked (based on Hankamer and Mikkelsen 2005):



A further critique is that there is no principled reason, under Embick and Noyer's analysis, that D cannot use the A as a host; in other words, if AP is intervening in the structure, there does not seem to be any reason why A cannot head-move to D to form **gamla-n hus* in order to satisfy the requirement that D have a host. They note that the requirement that N move to D is nothing more than a stipulation imposed to get the facts straight, a problem inherited from Delsing (1993). The real oddity of N to D movement is that it only has to happen when it is possible, and without this requirement, there is no way to prevent **den hest* from occurring. If a feature driven analysis is proposed, the features would be left unchecked if there were an intervening head blocking the movement, so this too is untenable. In other words, a head movement analysis for Danish and Swedish runs into a number of problems.⁸

Hankamer and Mikkelsen (2005) propose a movement-free analysis in Distributed Morphology in order to capture the Danish facts.⁹ Essentially, the syntax outputs the tree in (21).¹⁰

- (21) Simplified definite DP based on Hankamer and Mikkelsen 2005:



In order to make this work, Hankamer and Mikkelsen develop what they call CONTEXTUAL VOCABULARY INSERTIONS (CVIs). They observe that the alternation of the appearance of the definite article is evidently conditioned by the actual shape of the structure in which they appear. The CVIs are thus sensitive to this structure, allowing them to account for whether the suffix or the article is used. Under the basic tenants of Distributed Morphology, phonological material is inserted into syntactic terminals after syntax during a part of the derivation called SPELL-OUT. Vocabulary insertions are typically determined based on features sitting in the syntactic terminals, consistent with Subset Principle (Halle 1997). Hankamer and Mikkelsen extend this to include a clause regarding contextual information that may be included in VIs (the italicized portion of (22)).

⁸Another important part of Hankamer and Mikkelsen's analysis is based on the fact that there are a number of lexically specified nouns in Danish that do not take the suffix. This poses a problem for Embick and Noyer's analysis. Hankamer and Mikkelsen build their theory in a way such that suffixation will not occur when such nouns are in definite constructions by giving the morphology access to the list of elements that cannot take the suffix.

⁹They also propose a lexicalist approach to this material; I do not discuss this in this paper.

¹⁰I am not showing the full feature bundles under each node, as Hankamer and Mikkelsen do. They are not crucial for the exposition here.

(22) The Extended Subset Principle:

The phonological exponent of a Vocabulary item is inserted into a morpheme in the terminal string if the item matches all or a subset of the features specified in the terminal morpheme. Insertion does not take place if the Vocabulary item contains features not present in the morpheme. Where several Vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen. *If two or more Vocabulary items contain the same features but differ in contextual specification so that the contextual specification of one item is a subset of the contextual specification of another, the item with the more restricted contextual specification must be chosen.* (Hankamer and Mikkelsen 2005:105 ex. (37))

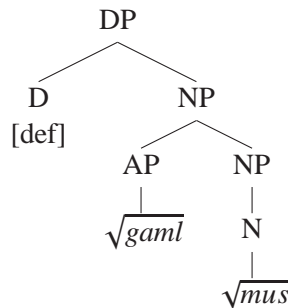
The VIs they provide are given in (23).

(23) VIs from Hankamer and Mikkelsen 2005:104:

- a. -en ↔ [D, def, sg, cg¹¹] if sister to a minimal N that contains the features [sg] and [cg]
- b. den ↔ [D, def, sg, cg] elsewhere

Assuming a model of syntax with bare phrase structure (Chomsky 1995), the suffix will be spelled out when its sister is a minimal N (i.e. not an NP or branching node). PF requirements on suffixes will ensure that the D is spelled out after the N in the linear ordering. The article is inserted elsewhere (i.e. when N projects a phrase), as it is less specified than the suffix. By this means, the definite article must be spelled out in contexts where there is an adjectival modifier because the D is not the sister to a minimal N in this structural context, as shown in (24).

(24) Simplified definite DP with modifier (based on Hankamer and Mikkelsen 2005:106 ex. (39)):



This, of course, works well for Danish, but it does not capture Swedish as this does not result in double definiteness. Like Embick and Noyer (2001) and Delsing (1993), Hankamer and Mikkelsen (2005) must say that either Swedish definite determiners select for definite nouns or that the suffix is attached for some PF requirement postsyntactically. In other words, this amounts to little more than saying, as Delsing is forced to, that the suffix can be base-generated on the noun in Swedish. If the ability to add the suffix without moving N is available anyway in Swedish, then it is not at all clear why movement is ever necessary, in Embick and Noyer's and Delsing's terms, or why D is a suffix in some configurations and causes a dissociated morpheme to be suffixed in other situations, as Hankamer and Mikkelsen argue. In other words D imposes the definite suffix on on the head of NP, but under these analyses there are two significantly different ways of doing the same thing.

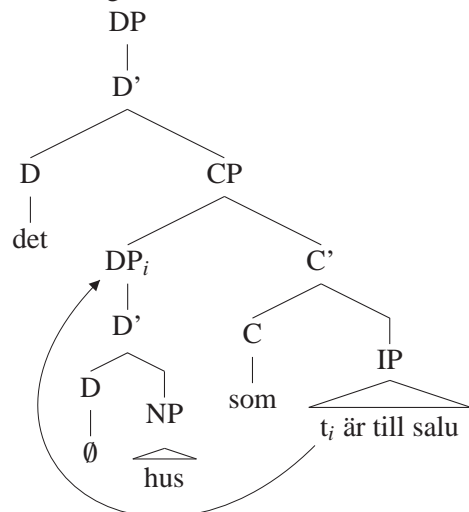
3.1.1 Relative Clauses in Hankamer and Mikkelsen 2005

Before turning to some other analyses, it is worth looking at how Hankamer and Mikkelsen (2005) treat the variation in relative clauses. Their analysis also runs into an apparent puzzle when dealing with restrictive

¹¹Common gender.

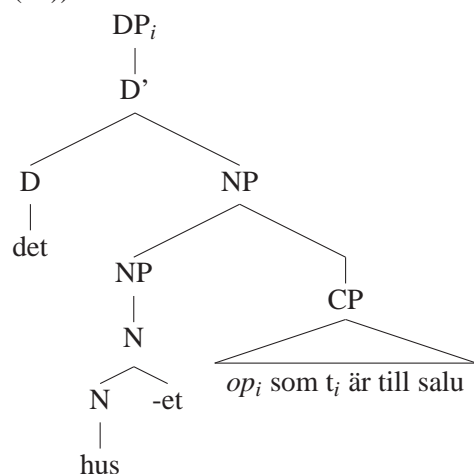
relative clauses. In order to explain why the definite suffix does not appear on nouns in nominals with relative clauses, they propose a head raising analysis of relative clauses for Danish. The analysis can also explain the cases where the definite suffix in Swedish fails to surface within in the context of their analysis. Under this analysis, the definite article takes a relative CP as its complement. Because *det hus* does not form a phrase in this structure, *det* is not in construction with *hus* and therefore will not suffix onto the noun. This captures the fact that relative clauses always appear with the article.

- (25) A raising structure for relative clauses (adapted from Hankamer and Mikkelsen 2005 ex (55)):



The trouble for this analysis is that in Swedish, as opposed to Danish, the definite suffix can appear in restrictive relative clauses (recall the data in §2.3.2). Since the above structure forces there to be no suffix on the noun, Hankamer and Mikkelsen (2005) propose that in Swedish adjunction structures are also available for restrictive relative clauses, permitting suffixation. In this case, the CP modifier prevents the N and D from being in construction, so D will not suffix onto N. The definite suffix is then attached to N to satisfy the requirement that N expone definiteness.

- (26) An adjunction structure for relative clauses (adapted from Hankamer and Mikkelsen 2005 ex (62)):



In this way, their analysis can capture the apparent variation, if one is willing to admit two relative clause constructions into the language.

3.1.2 Issues with This Approach

The biggest challenge for analyses that only admit a single functional head in the nominal projection lies with the how they handle the definite suffix. Under these analyses the definite suffix is nothing more than some sort of morphological reflex of definiteness that arises as a result of the noun occurring in a definite DP. This, however, is not in line with the facts that both the article and suffix appear can appear independently of one another and that they are each sensitive to different discourse and semantic contexts. In the three variations looked at in §3.1, it is merely stipulated that the suffix comes generated on the noun (as in Delsing 1993) or gets added some point after the narrow syntax (as in Embick and Noyer 2001 and Hankamer and Mikkelsen 2005), just to ensure that double definiteness happens. This, however, cannot account for the semantic activity of the suffixes seen in §2.3.2. In order to be interpreted at LF, as Anderssen (2007) claims they are, the suffix must exist in the syntax proper. To insert the suffix on the PF branch after syntax without any reason is to insert it too late.

The analysis that Hankamer and Mikkelsen (2005) provide begins to account for some of the variation in suffixation, doing so in the narrow syntax, but it leads to an analysis where Swedish must produce relative clauses in two different ways to account for this variation. I agree with them that there is no a priori reason that a language should have only one relative clause construction (Jorge Hankamer, p.c.). The problem is that the two different constructions do not seem readily able to explain the differences in meaning observed in §2.3.2. Granted, one could argue that the difference in meaning derives from the opposing derivations, but this does not seem tenable in light of the facts about superlatives in §2.3.2. Recall that the nominals with superlative adjectives show the same pattern with regard to definite suffixation that nominals with restrictive relatives do. Extending Hankamer and Mikkelsen's two-construction analysis of relative clauses to superlative adjectives strikes me as being ambitious at best, given that relative clauses and adjective phrases have noticeably different internal structures. It would be very strange if these facts about the suffix were caused by different forces, and as such we should seek to find a unified explanation for why the definite suffix is able not to surface in these environments. Suffixation is not simply an optional operation in these environments. Definite suffixation in DPs with relative clauses and superlatives is unified by a common semantic motivation.

3.2 *Dual-Head Analyses*

Turning now from analyses that posit only a single functional head above NP, I look at a couple of analyses that place the definite article and the definite suffix in distinct structural positions. This sort of analysis, represented by Julien 2005 and Anderssen 2007, uses this distinction as the explanation for the individual behavior of the article and the suffix, one of the primary problems with analyses that only have a single functional head dedicated to definiteness marking. These are not without their own problems, though. The trouble here stems from trying to pin down exactly what drives the mechanics of these analyses. In the case of Julien 2005, the blocking of phrasal movement is taken to account for double definiteness marking, but the alleged motivation behind this movement appears to be inconsistent. Anderssen's (2007) approach avoids these issues, but it is susceptible to many of the of same problems that Delsing's and Embick and Noyer's are.

3.2.1 Julien 2005

Julien 2005 is one of the most recent and, perhaps, most exhaustive analyses of the Scandinavian nominal phrase. Julien's analysis of double definiteness marking (described in §2.2 of the book) is based on the presence of two functional heads that spell out each element of double definiteness marking. The apparent

advantage of such a system is that having two separate syntactic heads to introduce these elements might make it easier to explain why they are in slightly different distributions. Following from the data discussed above, the definite article is associated with uniqueness¹², and the suffix represents familiarity.

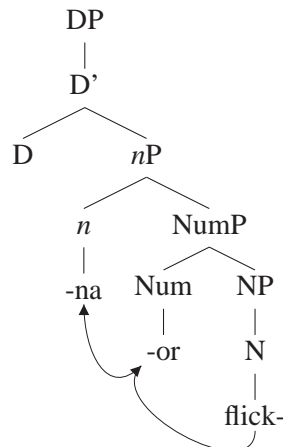
The driving force of her analysis lies in a process called IDENTIFICATION. The central hypothesis of this theory is that the DP layer of the nominal projection needs to contain phonological material of some sort (Julien 2005:14-24). There are two basic ways for this requirement to be satisfied. Material can be moved into the specifier of DP from below, satisfying the requirement that the DP layer have material in it. Should this fail to occur, the D will spell out. Over the course of the book this hypothesis gets modified bit by bit in order to make it fit the data she finds across the North Germanic languages (see the brief remarks in Mikkelsen 2007:§2.1). We will see that one apparently necessary modification that Julien's assumptions lead her to make is the stipulation that the material that is moved into the DP layer needs to have a nominal category feature, which allows that material to have a referential index (Julien 2005:18).

There are a few components of Julien's theory to take note of before looking at derivations in this framework, particularly the assumptions she makes about syntactic heads in the nominal structure. As I noted above, Julien's framework has two functional heads dedicated to definiteness marking. One is the usual D head, which is the topmost head in the nominal projection and hosts the definite article. The other is *n*, a projection of Julien's own invention which sits lower down and is the syntactic origin of the definite suffix. Along with these heads is another functional head Num, which is where plural morphology is generated. These both sit above N, which is the lexical core of the nominal. N is the origin of the nominal category feature (2005:5).

The way Julien handles attributive adjectives is, of course, crucial to the derivation of double definiteness, since the presence of adjectives is one of the main triggers for the phenomenon. Rejecting an adjunction analysis for AP and following an analysis by Cinque (1994), Julien adopts an analysis where AP is introduced in the specifier of a functional projection over *n*P which she labels α P. This is in part to avoid the Abney 1987-style analysis utilized by Delsing (1993) where D directly c-selects AP and A c-selects NP.

Given these assumptions, we can now see how Julien's analysis is meant to work.¹³ When there is no adjective, the derivation proceeds as shown in (27)-(29) for the word *flickorna*, "the girls". N head-moves to Num and then the N-Num complex head moves to *n*. Each of the component morphemes of the word is thus picked up—*flick*-, the nominal stem, *-or*, the plural marking for the noun, and *-na*, which indicates specificity.

(27) Roll-up movement in *n*P:

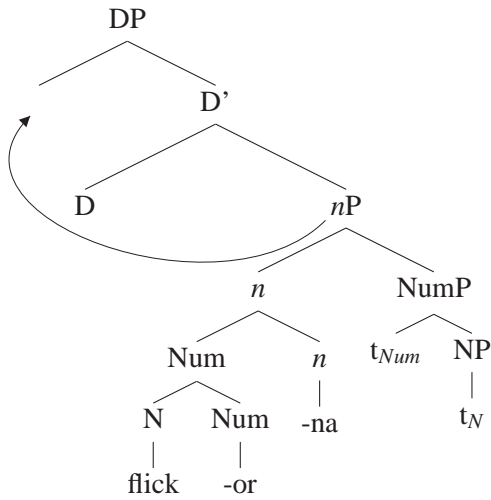


¹²Julien uses the term INCLUSIVE(NESS), since uniqueness is taken to only be a property of singular nominals (2005:38-39). I retain the use of unique(ness) here, to be consistent with what most other authors have written.

¹³Julien's theory is a bit more complex than what I am showing here. I am simplifying somewhat, eschewing the discussion of numerals, which behave very similarly in how they trigger double definiteness marking. The basic mechanics of her analysis are still accurately presented.

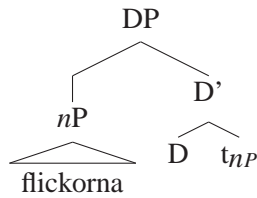
At this point, the word has been built, but the DP has not yet been identified. The head movement of N through Num and up to *n* is what causes *nP* to have a nominal category feature. As a result, the head of *nP* has a nominal category feature and *nP* can carry a referential index. Consequently, *nP* can move to Spec, DP to identify DP.

(28) Identification of DP:



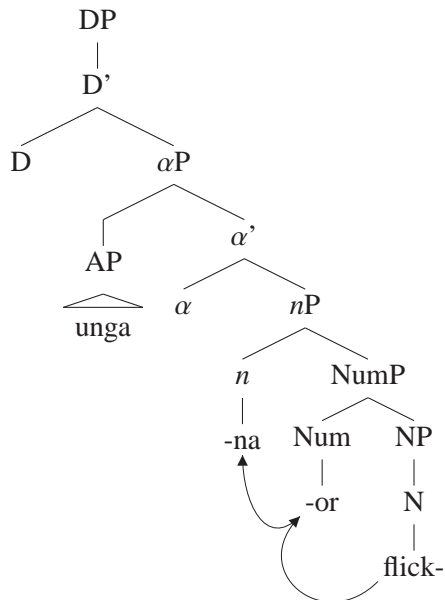
This yields the final structure in (29).

(29)



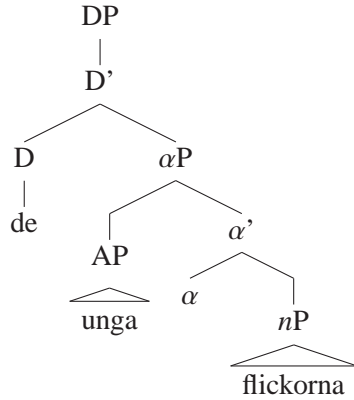
The derivation of a more complex definite DP like *de unga flickorna*, “the young girls,” proceeds a little differently. The first part of the derivation when α P is present in the structure is identical to when it isn’t (as in (27)). The lowest heads undergo roll-up movement to *n*.

(30) Roll-up movement in *nP*:



At this point, however, the derivations diverge. According to Julien, the AP sitting in αP is now the nearest goal for the probe D. However, AP cannot move to Spec, DP to identify DP, due to the fact that it does not have a nominal category feature and, therefore, no referential index. Since AP cannot move to Spec, DP, and AP blocks the probe from having nP as its goal, the only option left is to spell-out D:

- (31) Movement of nP is blocked by AP:



The consequence of spelling out D like this is that there are apparently two markers of definiteness—the suffix provided by n and the definite article in D.

3.2.2 Issues with This Approach

There are, however, some lingering questions about some of the more technical details of this analysis. The main problem extends from the stipulation that the material that identifies DP must carry a referential index. She imposes this injunction the syntax as an explanation for why AP cannot identify DP. APs cannot be referential on their own, and this, she implies, is the salient difference between them and nPs . She supports this claim about adjectives by giving examples from Norwegian that show that bare adjectives without determiners are ungrammatical when they “take on a referential function” (2005:29). The same is true of Swedish (Delsing 1993:85-86):

- (32) a. Jag gillar inte *(den) gröna.
 I like not the green.DEF
 I don't like the green one.
- b. *(Den) gamle har gift om sig.
 The old.DEF.MASC has married again self
 The old man has remarried.

Since AP cannot carry a referential index, it cannot move to Spec, DP for the purposes of identification. The argument here, however, does not seem to amount to much more than a point raised both by Julien herself and by Hankamer and Mikkelsen (2005) with regard to the analysis found in Delsing 1993 and Embick and Noyer 2001. In these accounts, the material in D needs some sort of (phonological) host, and N moves to D in order to serve as that host. The presence of AP in the nominal projection, however, blocks head movement of N to D. The problem for these analyses is that there is no obvious reason why A cannot move to D in these theories (see §3.1).

The same problem exists here. The DP layer needs some sort of phonological material, and movement of nP to DP can satisfy this requirement. AP, being closer, intervenes between the two, blocking movement of nP . Mysteriously, movement of AP should be able to provide phonological material but, for

some reason, cannot satisfy this requirement, so in order to circumvent this problem the analysis must stipulate that AP is incapable of identifying DP for some reason. This is, as noted above, the reason why Julien weakens the Identification hypothesis, limiting the phonological material that gets moved to DP to only that which may carry a referential index.

This stipulation, though, is where the trouble for her theory lies. Julien's evidence that APs are not referential on their own is sufficient, in my opinion. but she never gives any positive evidence for the ability of *nP*s to be referential on its own.¹⁴ Such a modification to the theory really ought to be based on evidence about *nP* and not the inability to use AP for Identification. We can give her the benefit of the doubt and try entertaining the hypothesis that AP cannot move to Spec, DP because it has no referential index, but this will lead to a paradoxical problem. The trouble comes when this hypothesis is examined along with Julien's treatment of definite nominals without the definite article (as in §2.3.1 above). Her analysis of such cases is that the definite article is not present because these nominals are not really referential. Since the attributive adjective narrows down the set denoted by the descriptive content of the nominal to a single (contextually salient) member, no reference is necessary to pick out what the speaker is talking about, and so the definite article is unnecessary. Stepping away from whether or not this is actually the case, for these nominals not to be referential would require *nP* not to carry a referential index, since these nominals all display the definite suffix which is hosted in *n*. The conclusion must be either a) that *nP* is not referential to satisfy the stipulation that nominals without articles are not referential, or b) that *nP* is referential and that definite nominals without articles are also referential, or at least don't require an overt D to be so.

Conclusion (a) clashes with the explanation of why APs do not move to Spec, DP. Julien claims that AP cannot identify DP because it does not have a referential index, but it would also seem that *nP*, which does move to DP, cannot have an index either. As it stands, this would leave no reason why AP cannot identify DP.

Conclusion (b) is also problematic. If nominals can be referential without the article being present, then D does not need to spell-out in order for the DP to be referential. This, importantly, would leave DP unidentified, without any phonological material either in D or Spec, DP. Identification is not optional under this framework, however, and we are left with no reason for why in some cases DPs are not identified. As identification is the primary motivation behind the conditions that result in double definiteness, and since this is one of the primary gaps in the double definiteness paradigm, understanding this gap is crucial.

To be entirely fair to Julien's analysis, the possibility remains that some other sort motivation could cause Identification to reject AP and not *nP*, but there is no discussion of what else might lie behind this. Even then, the kind of feature-driven analysis that is hinted at in the text seems like it is problematic. Assuming that there is some unvalued feature on D that is checked by moving *nP* into Spec, DP, it is not clear why the derivation does not crash when AP blocks movement of *nP* into Spec, DP. Spelling out D should not be sufficient to check the feature. This is not dissimilar to the argument against raising of N to D in Hankamer and Mikkelsen 2005: the movement only has to happen when it can happen (see the discussion in §3.1).

A related point is that it cannot be easily understood why pronouncing D would provide D with the required referential index. There is no straightforward explanation for why DP cannot come with a referential index when D is not spelled out, nor is there any explanation for why spelling-out D permits the DP layer to have one when AP blocks movement. Given the properties of spell-out in Distributed Morphology (Halle and Marantz 1993, and following), which Julien assumes for things like of adjectival inflection (2005:46), this analysis for D is incoherent. On the reasonable assumption that the D in both modified and unmodified definite nominals is the same, the decision whether to pronounce D should arise

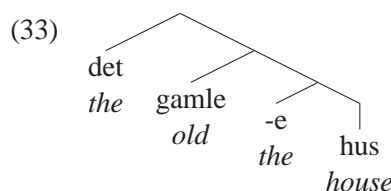
¹⁴If *nP* can be referential on its own, then one might wonder why the DP layer above it is even necessary. No determiner ever surfaces when there is no modifier in the adjective. Recall Stroh-Wollin's (2003) claim that the definite article D restricts the referent of a nominal to a single, unique entity. Under a theory like this where *nP* has a referential index and contains all of the descriptive content of the nominal, we might question what work the functional material of the DP layer is actually doing and why it is necessary at all.

postsyntactically during spell out. The features in D should be set by this point and will have been sent to LF, so spelling out D cannot cause DP to have a referential index if it does not already.

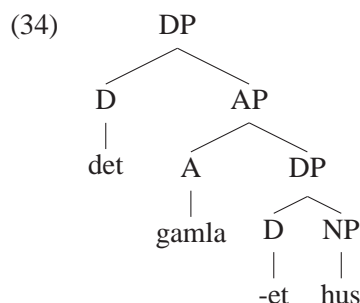
In summary, the analysis presented in Julien 2005, while potentially powerful, has a number of theoretical issues that need to be addressed. The paradoxical requirements of identification are particularly troublesome—it is unclear what needs to move to Spec, DP, what can move there, and why. Even then, the motivation for this movement is problematic as well, for if it is feature-driven as suggested then the derivation should crash whenever there are adjectives present, and the conditions on the spell-out of D are hard to pin down given a reasonable set of assumptions.

3.2.3 Anderssen 2007

Similarly to the theory above, Anderssen (2007) also assumes a dual-head analysis for definiteness marking in Scandinavian. However, hers is much simpler in the mechanics. In her analysis, there are two D heads, one above and one below the adjective. The only structure she provides for this is given in (33).



Based on her discussion, I assume the following labels¹⁵:



Each D represents different features which together form what is typically thought of as definiteness, much as described by Julien (2005:35-44). Under the analysis presented by Anderssen, the higher determiner is taken to represent uniqueness, the “main contribution to the definite interpretation” (2007:255). She claims that this is visible in the contrast between (35a) and (35b), below. In (35a), there is only one definite article with coordination of the material underneath. Here, the DP refers to one unique individual.¹⁶ In (35b), two full DPs are coordinated there are two individuals:

- (35) Uniqueness in Norwegian DPs (Anderssen 2007:255)
- a. den unge professor-n og omsorgfulle far-n
 the young professor-DEF and caring father-DEF
 ‘the young professor_i and caring father_i’

¹⁵This structure is remarkably similar to the one against which Delsing (1993) argues. See (17) in §3.1.

¹⁶Julien (2005) also notes these facts. In cases where “it is pragmatically impossible for the two coordinates to have the same reference”, Julien notes that where there is only one article it seems to be possible to have two referents, e.g. ‘den unga flickan och gamla mannen’, “the young girl and old man” (2005:34-35). As far as two coordinated DPs are concerned, there is no reason that I am aware of that should prevent them from having the same discourse referent.

- b. den unge professor-n og den omsorgfulle far-n
 the young professor-DEF and the caring father-DEF
 ‘the young professor and the caring father’

The lower determiner spells out specificity. As she puts it, the suffix signals “having an ordinary discourse referent”. She does not provide a lot in the way of data to demonstrate this, but given the Swedish data in §2.3 and discussion in §2.1, in Stroh-Wollin 2003, and in Julien 2005, the definition makes sense, correlating to discourse familiarity. In the cases where the definite article is dropped, the DP must have a particular discourse referent, and the definite suffix sticks around in these very circumstances.

Under Anderssen’s conceptualization, the features are essentially split by the intervening modifier. As she terms it, the features “straddle” the modifier. For her, “certain features in the nominal domain that are syncretised into one lexical item in unmodified structures have separate realizations in modified structures” (2007:259). This seems to be why she claims to have an analysis without any movement. When there is no modifier, there is effectively only one D spelling out both features, and this becomes the definite suffix.

This notion of straddling is troubling though. The claim is that there is no movement, but there is no real clear way to tell since this theory is not fully fleshed out. The tree in (34) looks remarkably like one which Delsing (1993) argues should not be possible. Recall from the discussion in §3.1 that Delsing suggests that such a structure should be ruled out because it predicts repeating determiner-adjective strings, which do not occur (see example (17) and the surrounding discussion).

Aside from the lower determiner, this analysis looks much like Delsing’s. The intervening adjective keeps features in the two determiners from joining together, and if we view Anderssen’s syncretization of features as nothing more than an analogue of head movement in Delsing’s theory, then what we really have is the same problem. Translating this to a movement based analysis, if we look at this structure, we are faced with the problem that AP is an intervening phrase in the structure. This is the exact configuration which Hankamer and Mikkelsen (2005) argue against. Assuming that they are correct, AP must be an adjunct to the lower DP (ignoring for now that it should really modify NP).

However, if AP is an adjunct and not an intervening phrase, it becomes unclear what structural relationship prevents the lower head from head-moving to the higher one, or, in Anderssen’s terms, what prevents the features on the two D heads from syncretizing to form a single head. In other words, if AP is a modifier the the two features that the determiners are taken to represent in Anderssen’s analysis are no longer separated in a syntactically meaningful way, and it is not possible to tell whether or not they ought to join given their structural relationship here. In all, this analysis is simpler than Julien’s and seems to suffer from a lot of the same pitfalls that the one proposed in Delsing 1993 does.

3.3 Summary

Each of the kinds of analyses discussed in this section has certain drawbacks. Analyses with only one functional head, like that of Hankamer and Mikkelsen (2005), do not capture the independent behavior of the definite article and the definite suffix. Analyses with two heads run into various structural problems. In the case of Julien 2005, the motivation behind the requisite movements is not clearly understood. Furthermore, Anderssen’s (2007) theory, like Julien’s, seems to fall victim to a number of criticisms of Delsing 1993 and Embick and Noyer 2001. For Anderssen’s theory, the structure and theory she proposes really reduces to Delsing’s. For Julien’s, movement is only necessary when it can happen, just like in Embick and Noyer 2001; to wit, it remains unclear why movement is blocked.

This is where Hankamer and Mikkelsen 2005 makes some headway. This account does not appeal to syntactic movement to try to account for the distribution double definition, and in that way circumvents many of the theoretical issues that arise in Embick and Noyer 2001 and Julien 2005. Anderssen 2007, on the other hand, provides a clear way of understanding the independence of the definite suffix and the definite

article in Swedish. By having individual features in the syntax that independently control the presence and absence of the definite article and suffix, the theory is capable of explaining when they appear and when they do not. The article and suffix are just the morphological exponents of these features, and since they exist in the syntax they will be present for interpretation at LF.

Ideally, it would be beneficial to try to unify the structurally more sound analysis outlined by Hankamer and Mikkelsen (2005) with an account that provides the independent semantic features that Anderssen (2007) suggests. I will do just that in the next section.

4 Unification

The discussion in the last section suggests that a potential solution to the problem comes from unifying the two different kinds of analyses. There needs to be some way to account for why the suffix and the article can occur independently of one other. Hankamer and Mikkelsen (2005) provide a reasonable syntactic structure and an analysis that does not require movement to derive the correct ordering. It cannot account for the semantic facts easily, however, and so needs some way of capturing the independent behavior of the article and the suffix, as in Anderssen's (2007) theory. As I see it, there are two ways to bring these analyses together:

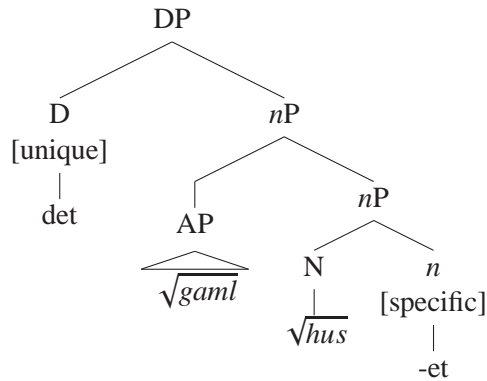
1. There are two functional heads in the syntax representing different features, as in Anderssen 2007. Some sort of contextual allomorphy, as in Hankamer and Mikkelsen 2005, causes the heads to spell out differently depending on the presence of a modifier (the two-head analysis).
2. There is only one functional head (D). The features described in Anderssen (2007) are preserved, but they both reside in D and trigger independent morphological processes to occur (the two-feature analysis).

As I will show below, the two-head analysis runs into problems when it comes to specifying a context that can account for the unmodified structures. This suggests that it is not actually possible to have two functional heads in the structure. I show that the two-feature analysis is superior. In essence, this approach is simply a more articulated version of Hankamer and Mikkelsen (2005).

4.1 Two Heads

I take seriously the claim in Julien 2005 and Anderssen 2007 that there need to be two separate functional projections over NP, but it is highly unlikely that they are really each a separate D. Rather, there need to be two distinct kinds of functional head, one of which being D and the other being some other category sitting somewhere between DP and NP. For the sake of discussion, I will suppose an analysis where the definite suffix originates in a (syntactic) little-*n*, following Julien (2005). This yields the structure illustrated below:

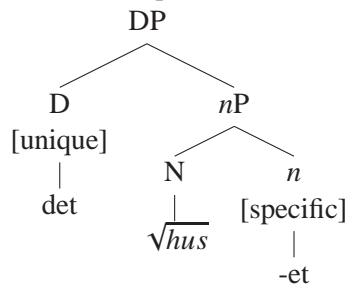
- (36) First attempts at unification: *det gamla huset*



This tree would be generated by the syntax and sent to the morphology. The gender of the definite article is determined by agreement with N, which in this case is neuter. D would spell out as *det*, and *n* would spell out as the suffix *-et*. PF requirements would ensure that *-et* became a suffix. No blocking of movement is necessary by this account, nor are any intervening modifiers.

At first glance, the above analysis might look appealing. The cases where the definite article is missing are simply places where in the structure there is no D, and, likewise, the appearance of the suffix is triggered by the presence of *n*. The trouble is what happens when the adjectival modifier is removed from the structure. Even in the unmodified examples where the article does not appear, the DP still receives a [unique] interpretation, indicating that the feature must be present when being sent to LF:

- (37) A first attempt at unification: **det huset*



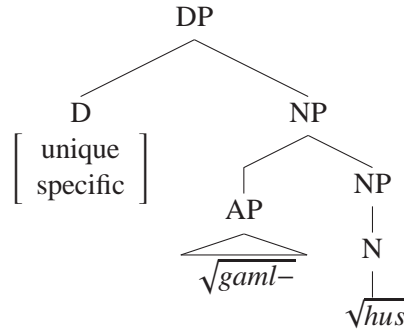
Here is the problem: there is no syntactically satisfying way, given this structure, to block the appearance of the definite article (i.e. *den/det*). To wit, it is impossible to formulate a contextual VI like the ones proposed in Hankamer and Mikkelsen (2005) to target situations where AP is or is not in the structure. *nP* is always going to be the sister of D. This means that there is no recourse to the rule like the one for (21), which can rely on D being the complement to a minimal N. Fusion cannot resolve the situation because the two heads are never adjacent. Even though head movement could produce a grammatical structure, it runs into the exact same problems discussed above, namely that when an AP is present, as in (36), it cannot be taken to block head movement, and so we would expect that head movement should always be a possibility. In short, while this structure can get the modified examples, it does not appear to provide any satisfactory way of preventing **det huset* from being spelled out.

4.2 Two Features

Having two functional heads in the structure is problematic if the distribution of the definite article is to be adequately explained. This points toward there being a just a single functional head. The features from Anderssen (2007) are still necessary, though. Rather than have each feature be a separate head in the syntax,

it makes more sense to have both of them be in D. Under this analysis, the syntax would send the following structure to spell-out:

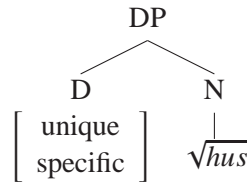
- (38) Features in D: *det gamla huset*:



Under this approach, a series of contextually specified VIs will be responsible for the form and appearance of D. Here [D, unique] spells out as *det*, agreeing again with the [neuter] feature of \sqrt{hus} . The [specific] feature causes a dissociated morpheme to be inserted directly after the noun.

The unmodified structure looks like this:

- (39) Features in D: *huset*



Here, one could either say that D becomes a suffix, as in Hankamer and Mikkelsen 2005, or that D is simply not spelled out, and [specific] simply causes a dissociated morpheme to be inserted. I am going to adopt this second hypothesis. For one thing, this makes the purpose of [specific] consistent—it conditions the appearance of the suffix on nouns.

A more important reason to not adopt an analysis that suffixes D to N is that one needs to say something about how D is spelled out either way. The idea that *d*-support (Santelmann 1992), as adopted by Embick and Noyer (2001), is necessary to provide phonological support to D is actually very problematic. For one thing, it seems entirely stipulative; nowhere else in Swedish is the segment [d] epenthesized for (morpho)phonological reasons. Beside this issue, the analysis does not even capture the facts where plurals are concerned. *D*-support makes some sense when looking at singulars because the phonological material that is suffixed onto nouns is identical to the phonological material occurring after [d], as shown by the underlined portions of the examples in (40):

- (40) Singular Definite DPs

- | | | | |
|----|---|----|--|
| a. | (det gamla) <u>huset</u>
(the old) house.DEF | b. | (den röda) <u>bilen</u>
(the red) car.DEF |
|----|---|----|--|

The generalization is not very general, though, particularly because it never works with plurals. The plural article *de* is pronounced [dɔm] in standard Swedish.¹⁷ However, there is no plural definite suffix pronounced [ɔm]—the only definite suffixes that appear in the plural are common gender *-na* and neuter *-en*:

¹⁷*De* is occasionally written as *dom* in informal contexts. It is also worth noting that in very formal registers, such as church speech, *de* is pronounced [de:] as spelled. However, there is still no plural suffix which matches this pronunciation.

- (41) Plural Definite DPs
- | | |
|--|---|
| <p>a. <u>hus</u> -\emptyset <u>-en</u>
 house PL DEF
 ‘the houses’</p> <p>b. <u>de</u> gamla <u>husen</u>
 the.PL old house.PL.DEF
 ‘the old houses’</p> | <p>c. bil -ar <u>-na</u>
 car PL DEF
 ‘the cars’</p> <p>d. <u>de</u> röda <u>bilarna</u>
 the.PL red car.PL.DEF
 ‘the red cars’</p> |
|--|---|

As a hypothesis, *d*-support raises the question why there are no forms like **dna röda bilarna* or **dom gamla husom*. If it were to be adopted, one would have to say that D gets pronounced very differently when it is supported by different things. The spell-out of D would have to be contextually specified anyway, and since the whole point of *d*-support is to give support to the phonological material that is inserted into D, it isn’t exactly satisfying to say that that material changes form when it is supported by this process.

Beyond this, the suffix that occurs with a specific nominal will always be of the same form regardless of whether there is adjectival modification. If D is simply suffixed in the unmodified structures, it becomes unclear why the reflex of the dissociated morpheme always matches the suffix that occurs when D is the suffix.

4.3 Vocabulary Insertion and Context

The differences between the modified and unmodified structures can thus be captured with a set of contextually specified VIs, like those from Hankamer and Mikkelsen, and dissociated morpheme insertion rules. The spell-out of D is controlled by the following VIs:¹⁸

- (42)
- a. $\emptyset \leftrightarrow [D, \text{unique}]$
 - b. $\emptyset \leftrightarrow [D, \text{specific}]$
 - c. $\text{det} \leftrightarrow [D, \text{unique}, \text{neuter}, \text{singular}]$ if sister to an NP
 - d. $\text{den} \leftrightarrow [D, \text{unique}, \text{common}, \text{singular}]$ if sister to an NP
 - e. $\text{de} \leftrightarrow [D, \text{unique}, \text{plural}]$ if sister to an NP

The suffix is inserted in the morphology by the following dissociated morpheme rule:

- (43) $[DP D_{\text{specific}} [NP N]] \rightarrow [DP D_{\text{specific}} [NP N\text{-DEF}]]$

These rules account for the basic facts about Swedish double definition. The following subsections demonstrate how they work. For reference, I repeat the Extended Subset Principle here, as the VIs above rely on it:

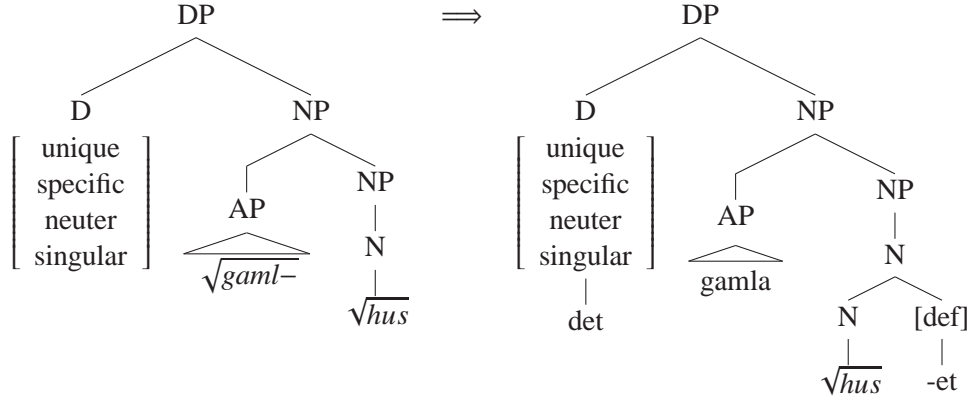
- (22) The Extended Subset Principle:
The phonological exponent of a Vocabulary item is inserted into a morpheme in the terminal string if the item matches all or a subset of the features specified in the terminal morpheme. Insertion does not take place if the Vocabulary item contains features not present in the morpheme. Where several Vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen. If two or more Vocabulary items contain the same features but differ in contextual specification so that the contextual specification of one item is a subset of the contextual specification of another, the item with the more restricted contextual specification must be chosen.

¹⁸Many thanks to Michael J. Houser for suggesting this phrasing of my original hypothesis.

4.4 Typical Cases

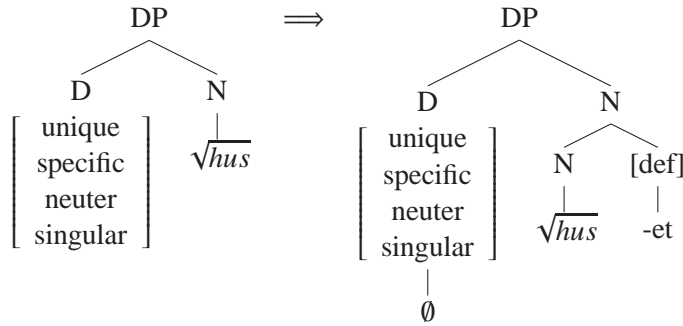
Example (44) demonstrates the derivation of a typical double definite DP. VI (42c) causes D to be pronounced as *det*, since, by (22), this VI matches a subset of the features in D and matches the context specification for the insertion. The definite dissociated morpheme is inserted under N by rule (43) because D is specified as [specific].

- (44) Double Definition: *det gamla huset*:



In examples without modifiers, like (45) the derivation proceeds similarly. Here, however, VI (42a) causes D to be phonologically null. While it is specified for exactly the same features as the D node in (44), it does not match the context specification because D is in construction with N—it does not have an NP sister, so VI (42c) cannot be inserted here. Again, (43) inserts the definite suffix.

- (45) No Modification: *huset*:



4.5 Single Definition

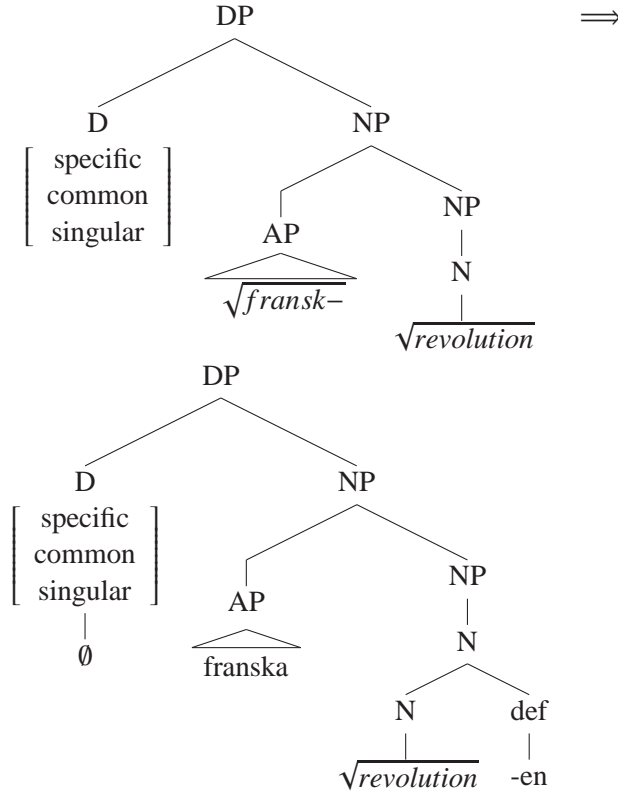
The data in §2.3.1 and §2.3.2 demonstrated that an account of Swedish double definition needed a more articulated explanation in order to explain the interaction between the semantics and the morphosyntax. Here, I show how the framework developed above is applied to this data and how it accounts for the observed patterns.

4.5.1 No Article

Accounting for the examples where no definite article proceeds much like the examples above. The determiner is specified [specific], but it is not specified [unique]. Recall that this is only possible when information typically provided by the [unique] feature is easily available from context or, as in this case, world

knowledge—the D with this feature specification would be semantically infelicitous in situations when this information is not available. The only VI that matches a subset of the features in the terminal is (42b), (the only one not specified for [unique]) which causes null pronunciation of D. (43) is again responsible for the definite suffix.

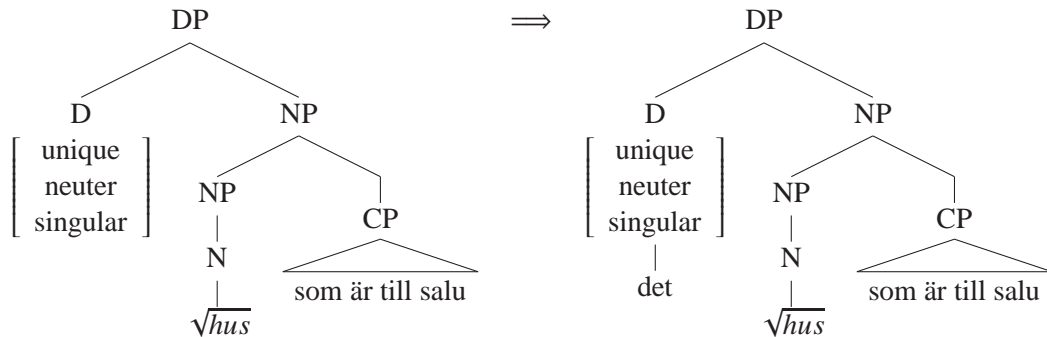
(46) No Article: *franska revolutionen*



4.5.2 No Suffix

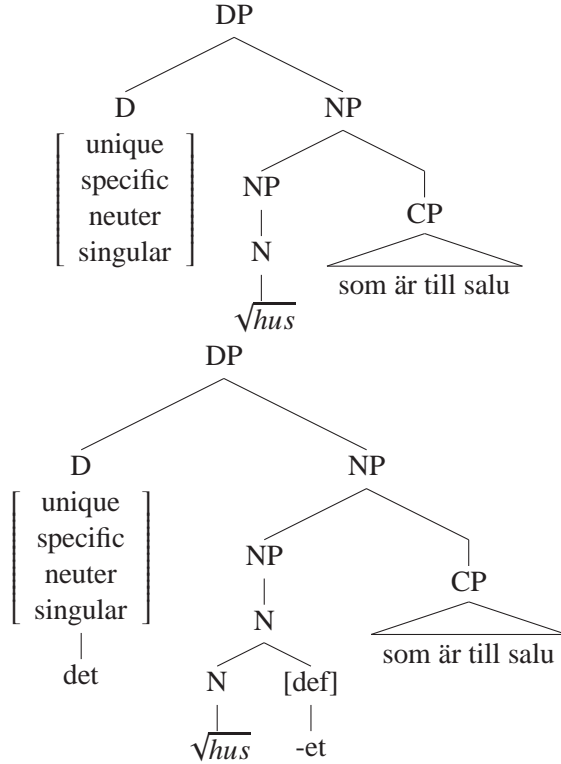
In all of the above cases, the suffix is inserted by the dissociated rule, so the definite suffix will not be inserted when the conditions for insertion are not met. This will happen when D has no [specific] feature, which is dependent on there being a discourse referent associated with the nominal. Here, (42d) will insert *det* into D, but the dissociated morpheme rule will not apply, but the lack of a [specific] feature will preclude suffixation.

(47) A relative clause without a definite suffix: *Det hus som är till salu*



Recall the fact that DPs with relative clauses can also bear the suffix. This leads Hankamer and Mikkelsen (2005) to conclude that Swedish needs two ways of deriving restrictive relative clauses, on the assumption that suffixation is in free variation. Under the analysis proposed here, this is not necessary. The lack of the suffix is attributable to the absence of the [specific] feature in D. Having a suffix does not require us to posit two separate relative clause structures. The different feature specification on D is responsible for suffixation. If D is specified [specific], the suffix will be inserted:

(48) A relative clause with a definite suffix: *Det huset som är till salu*



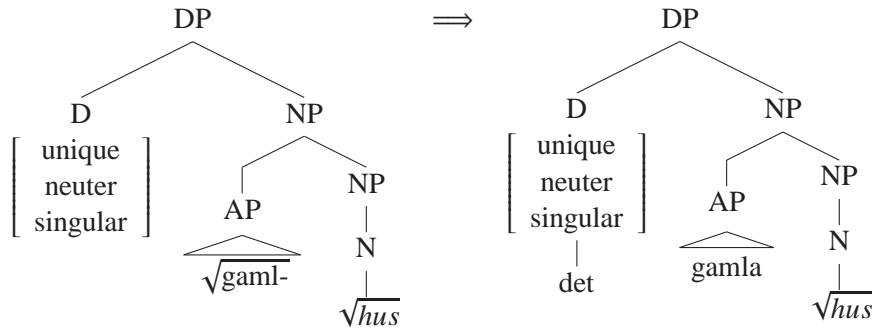
4.6 Possible Overgeneration?

There is a potential objection to the theory that I have outlined above, and that is that it does nothing to prevent examples like those in (49) from being generated. To wit, the syntax is able to freely derive trees like those in (50), where D has no [specific] feature. Thus, there would be no signal to the morphology to insert the definite suffix, producing ungrammatical example (49a).

(49) Modified NPs Without Suffixation:

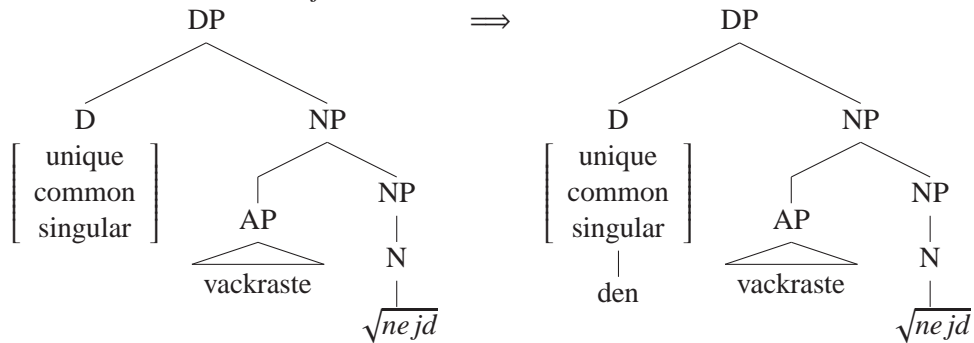
- a. *det gamla hus
the old house
- b. *den röda bil
the red car

(50) No suffixation: **det gamla hus*



This, however, is an absolutely necessary result of the theory. It is a critical point that if we want to capture the superlatives in §2.3.2 (an example is repeated in (51)) and the relative clauses in §4.5.2, the theory needs to be able to generate such trees.

(51) No suffix: *den vackraste nejd*



Structurally speaking, there are no palpable differences between (50) on the one hand and (51) and (47) on the other. In all of these cases, NP has some modifier adjoined to it, and the syntactic content of those modifiers seems relatively irrelevant to definiteness marking. Consequently, I contend that those examples in (49) are morphosyntactically well-formed, but semantically anomalous. As we have seen throughout this paper, the presence of the definite suffix is dependent on semantic and discourse factors. The requirement that it appear is not a syntactic one, nor is it required by the phonology. Rather, its use is determined by conditions of felicitous discourse. It is critical to remember that claiming that the definite suffix is merely a reflex of the definite article, as the single-head analyses do, is too coarse of an analysis to capture the cases where double definiteness marking does not occur. A theory of the morphosyntax of double definiteness marking in Swedish needs to permit single definiteness marking when the discourse conditions permit it to occur. Therefore, forcing double-definiteness marking in the morphology does not seem to be a viable way forward.¹⁹ Definiteness is, after all, a semantic notion that is merely represented by the morphology. The morphosyntax must be able to handle the exceptions.

The question that remains, then, is why suffixation is required when the modifier is a non-superlative adjective. The absence of the suffix in the cases of relative clauses and superlatives may have to do with some interaction between the way they these constituents restrict the NP and the way that specificity interacts with semantic restriction (see Stroh-Wollin 2003). That is, the additional material that the modifiers provide makes it such that the speaker does not need to indicate that they have an intended referent in mind. This is merely speculation, of course, and I leave this to future investigation.

¹⁹These facts are roughly the same in both Norwegian and Faroese (Thráinsson et al. 2004; Anderssen 2007). In these languages, too, the possibility of leaving out the suffix hinges on varying semantic factors having to do with the discourse familiarity of the referent.

5 Conclusion

A theory of double definiteness in Swedish must admit at least two definiteness-related features in order to achieve full descriptive accuracy. I have argued here that both of these features must be located in D on the basis of structural requirements for the operations permitted in Distributed Morphology. These features allow the theory to account for apparent gaps in the so-called double definiteness marking that occurs in Swedish, based on semantic observations that correlate with these gaps.

It is worth restating the point that double definiteness marking in Swedish is not really double in the sense that the article and suffix both mark a nominal definite. They each represent different kinds of semantic information, and while both are necessary for what is typically thought of as definiteness, they are not simply copies of one another, and one certainly does not condition the appearance of the other. This observation—the independence of the article and the suffix in certain environments—is really the basic motivation for the account provided above.

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