Language Mixing and Diachronic Change: American Norwegian Noun Phrases Then and Now

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Abstract: This article investigates the diachronic development of language mixing within noun phrases in the heritage language American Norwegian. By comparing data collected in the 1930s and 1940s with recently collected data, I present and discuss patterns showing systematic changes, specifically concerning the categories number and definiteness. Moreover, I propose two potential analyses of these patterns based on an exoskeletal approach to grammar. This theoretical framework crucially separates the abstract syntactic structure from its phonological exponents, and the analyses that are discussed consider both the structure and the exponents as the origins of the change.

1. Introduction

Language mixing, in the form of utterances consisting of both English and Norwegian items, is a typical attribute of the heritage language American Norwegian (AmNo). This variety of Norwegian finds its origin in the language of the many immigrants who settled in North America in the century prior to 1920, and it is still spoken today by some of their descendants. Previous studies have shown that mixing of English and Norwegian typically involves English content items occurring together with Norwegian functional material [1–5]. This article pursues the question of whether or not these mixing patterns are persistent over time, and it presents data showing that systematic, diachronic changes can be found. Furthermore, it explores changes in the underlying grammar that can potentially explain the observed patterns.

The focus of this article is AmNo noun phrases showing a mix of English and Norwegian items. Comparisons of newly collected data with data from the 1930s and 1940s show overall stability in the main patterns of mixing. Still, some systematic changes are found. Examples of language mixing within AmNo noun phrases are given in (1), where the data in (1a–c) show the typical mixing pattern, i.e., English content items with Norwegian functional material, and (1d–e) are examples that I will argue are the results of diachronic change: omission of functional morphology and the use of English functional items. Notice that the accompanying references show which corpus the utterance is drawn from, either Einar Haugen's collections from the 1930s and 1940s [6] or the recently established Corpus of American Norwegian Speech (CANS) [7], as well as the associated page number, in the case of Haugen [6], or informant code, in the case of CANS [7]. The two corpora will be introduced and discussed in more detail in Section 3. Moreover, all English items throughout this article are boldfaced, and I use English spelling in all examples even though Haugen [6] uses a more phonetic spelling.

The underscore in (1d) and subsequent examples, indicates the position of missing functional material, from the point of view of Norwegian.[1]

1. a. det   andre   **crew**-et   [6] (p. 571)
        the.N   other   crew-DF.SG.N
        'the other crew'.

    b. eg   fekk arbeid   på **railroad**-en   [6] (p. 590)
        I   got work   at railroad-DF.SG.M
        'I got a job at the railroad'.

    c. ikke   mange   **party**-er   [6] (p.587)
        not   many   party-INDF.PL.M/F
        'not many parties'.

    d. den   stor-e **building_**   [7]; chicago_IL_01gk
        the.M/F   big-DF building

    e. mange   **lawyer-s**   [7]; sunburg_MN_03gm
        many   lawyer-PL
        'many lawyers'.

The outline of the article is as follows. Section 2 introduces AmNo, both in terms of its historical background and the material that is available, and in Section 3, the two corpora under investigation are presented, as well as some methodological concerns. This somewhat lengthy introduction to the empirical material is intended to give the reader some insight into the environment and conditions surrounding AmNo during its lifespan, as well as to establish the comparability of the two corpora under investigation. Section 4 presents the theoretical backdrop of the article and provides an analysis of the typical mixing patterns. Data showing diachronic change are presented in Section 5, and possible analyses of these changes are proposed and discussed in Section 6. Section 7 concludes the article.

2. The Heritage Language American Norwegian

AmNo is a Norwegian variety that emerged in communities of Norwegian immigrants who settled in North America (mainly the U.S.) roughly from the mid-1800s until the 1920s, and is still spoken by some of their descendants. This section provides an overview of some main events in the period of Norwegian immigration and the immigrants' new lives in America, as well as an introduction to the available AmNo data. For a more comprehensive discussion of the AmNo language and society see [6–10] and references therein.

2.1. Historical Background

The first Norwegian immigrants to America left Norway in 1825, and in the years between approximately 1850 and 1920, this escalated into a mass migration. According to Haugen [6] (pp. 28–29), as many as 810,000 Norwegians immigrated to the U.S. in the period from 1836–1930, a number nearly equal to the entire population of Norway in 1800. Upon arriving in the U.S., many Norwegian immigrants settled in the Midwest (in particular Wisconsin, Illinois, and Minnesota), gradually forming large Norwegian settlements, where important institutions such as churches, hospitals, retirement homes, and newspapers were quickly established [10].

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[1] The following annotations are used in the glosses: DEF: Definiteness, DF: Definite, INDF: Indefinite, NUM: Number, PL: Plural, SG: Singular, GEN: Gender, M: Masculine, F: Feminine, N: Neuter. I have only provided a detailed glossary for the relevant noun phrases.

The conditions for, or necessity of, speaking English changed over the years following the first wave of immigration. The very first immigrants were forced to learn the language of the new country, English, in order to settle and live there. However, as the Norwegian settlements grew, this necessity diminished, and one could basically find everything one needed within the Norwegian-speaking community. Engaging in work, politics or social life outside the Norwegian settlement, on the other hand, required knowledge of English, and the children went to English-language schools. Subsequently, AmNo gradually turned into a language primarily used in the home and the church, the spheres most shielded from the English-speaking environment.

From the 1920s onward, the climate surrounding the Norwegian language in America changed. Immigration slowed down, Norwegian newspapers ceased publication, and major social and religious institutions switched to English as their main language. Moreover, the language became an obstacle for children, who typically entered school as AmNo monolinguals and faced teaching conducted in English. These issues, reinforced by a stigma against speaking Norwegian or speaking English with a foreign accent, led many parents to choose not to pass the language on to the next generation [6,11]. This severe decline notwithstanding, AmNo is still spoken in some areas, especially in the rural areas of the Midwest.

2.2. Heritage Languages

The Norwegian-speaking communities in the U.S. were always islands within the larger community in which English was, and is, the dominant language. Such immigrant language communities, situated in the midst of a larger, dominating language community, are recognized as heritage languages (HL), and their speakers as heritage speakers (HS). Definitions of these terms is given by Rothman [12]:

> A language qualifies as a *heritage language* if it is a language spoken at home or otherwise readily available for young children, and crucially this language is not a dominant language of the larger (national) society. [. . .] From a purely linguistic point of view, we assume that an individual qualifies as a heritage speaker, if and only if he or she has some command of the heritage language acquired naturalistically.

> Rothman [12] (p. 156)

As can be understood from this definition, a heritage language is acquired in childhood through naturalistic input, and HS are therefore considered native speakers of the HL [13]. However, at some point, typically when starting school, the speaker is introduced to the dominant language of the community, which in most cases eventually becomes the HS' own dominant language. This makes HS an interesting group of language users. On the one hand, the heritage language is their native language, but compared to monolinguals of the non-heritage variety of the language in question, they often do not reach the same level of competence. On the other hand, their competence might resemble that of L2 learners of the language, but HS will typically outperform L2 learners in many areas (see [14,15]). This tension has been discussed in several works and attributed to incomplete acquisition [16,17], or attritio [14,18]. Others have suggested that the grammar of HL should not be considered incomplete or impaired, just different, e.g., [19]. I return to these questions in Section 6.

In the case of AmNo specifically, the speakers in question are native speakers of AmNo, who acquired English as an L2. For the majority, English has also been their dominant language throughout most of their life. When they speak AmNo, it is clear that it is a variety of Norwegian; the majority of both lexical and functional items are Norwegian. However, English items occur frequently. Much work has been done documenting and researching AmNo, most of which focuses on the Norwegian properties of the language (see [9,10] and references therein). Language mixing in AmNo has also been investigated [1–5], and this is the phenomenon under investigation in the current article as well. The novelty of the current article, however, lies in a detailed investigation of aspects of the nominal

domain, providing the first systematic diachronic study of language mixing in AmNo. In the next subsection, I present the available data.

2.3. Data

The following timeline in Figure 1 gives a rough overview of the available AmNo material.
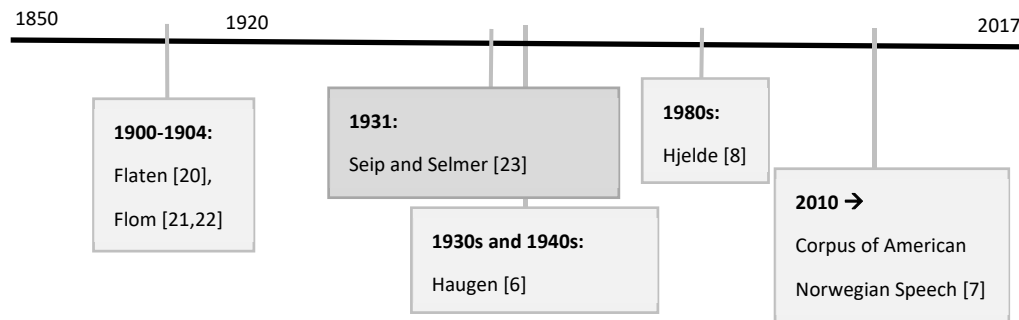

Figure 1. Overview of American Norwegian (AmNo) data.

Already around the turn of the 20th century, AmNo had gained the attention of researchers, when Nils Flaten and George Flom both published articles about the language variant [20–22]. Neither Flaten nor Flom collected large corpora, but in their articles, they included lists of English words occurring in AmNo. In 1931, Didrik A. Seip and Ernst W. Selmer interviewed and recorded several AmNo speakers, but unfortunately, this material was neither used much nor maintained very well. Many of the recordings were unfortunately broken or lost, and the quality of what remains is quite poor (remaining recordings are available in [23]). In the 1930s and 1940s, Einar Haugen carried out extensive fieldwork, which is presented and discussed in his two-volume work *The Norwegian Language in America* [6]. Arnstein Hjelde collected new data in the 1980s, and he was especially interested in a specific Norwegian dialect, *trøndersk* [8]. The most recent data collection effort started in 2010, under the auspices of the Norwegian in America (NorAmDiaSyn) project, and is still ongoing at the time of this writing. These data have been made available in the online CANS [7] created at the Text Laboratory at the University of Oslo, Norway. The diachronic comparisons in this article are based primarily on the material collected by Haugen [6] and the material in CANS [7], as these are the most extensive corpora and include a variety of dialects. These two corpora are introduced in the next section.

3. Introducing the Corpora and the Method

3.1. Haugen (1953)

Einar Haugen collected data from 1936 to 1948 [6]. At this time, the usage of Norwegian was already declining, and many cornerstone institutions in the Norwegian settlements, e.g., newspapers, social networks, and churches, were debating, or in fact carrying out, a switch to English as their main language. Nevertheless, Haugen describes communities where Norwegian was still spoken, churches occasionally had services in Norwegian, and the Norwegian newspaper *Decorah-Posten* was still circulated [6] (pp. 605–617). Although there was considerable variation among the communities, it would be fair to say that, in general, there was still a vital environment for the Norwegian language at the time of Haugen's data gathering.

Haugen's material consists of data from 260 informants, mainly from Wisconsin, collected through questionnaires, field notes and recordings. The first volume of his work is primarily a discussion of the AmNo society, whereas the second deals specifically with the linguistic data. The most relevant parts for the current article are the chapter discussing the grammar of English loanwords (i.e., what I refer to as mixed items), the selected vocabulary of English loans, which comprise 10% of the 3000 items he registered, and the appendix presenting the communities and informants studied.

Although some of Haugen's recordings are available online [24], I rely on his written materials and his own discussion of them, as the recordings are not transcribed and not of the best sound quality.

3.2. The Corpus of American Norwegian Speech

The most recent corpus available at present, CANS [7], captures the language as spoken nearly 100 years after the decline of immigration. Speakers were recruited through advertisements specifically seeking Norwegian-speaking persons whose ancestors had emigrated from Norway prior to 1920 and who had learnt the language at home from family members. Most informants recruited for this collection came from remote locations in the Midwest, where the Norwegian culture is still evident in cafes, shops, folk music, and handcrafting [9,25]. Usage of the language, on the other hand, varies. Some informants reported that they speak AmNo on a daily basis, whereas others might not have spoken AmNo since their parents passed away several years prior. All informants were, however, relatively fluent in AmNo [9]. Due to the challenges they faced, for instance at school, many have refrained from passing the language on to the next generation, meaning that these speakers may represent the last generation of AmNo speakers.

CANS is available online, and recordings of 50 individuals have so far been transcribed and published [7].[2] The corpus has two levels of transcription, one broad phonological transcription and one standardized transcription (*Bokmål*[3]), and sound and video files are provided. Individual items in the corpus are tagged with a variety of different grammatical categories, making it searchable. However, English items are not tagged in an equally detailed manner, and I have thus conducted certain specific searches to find these. The tag "x" provides all items not found in the Norwegian dictionary, which includes the English items, and through a process of manually sorting these items, 1265 English nouns remain.[4] These were subsequently sorted according to context. Seventy-five English nouns occur without any context at all and 156 nouns appear in a smaller (e.g., a phrase) or larger English context. Most interesting for the purpose of the present article are the 1034 English items that are found in an otherwise Norwegian context. The following discussions will be based on this sample.

3.3. Some Methodological Considerations

The two corpora presented in the subsections above clearly capture AmNo at two different stages of its development. Some methodological remarks should be made regarding the composition of the informant groups, and the form of the CANS corpus.

First, when discussing HS, first generation immigrants are typically not included as these speakers have acquired the language in circumstances with more exposure, and with no pressure from a dominant language [15]. On the other hand, one can argue that first generation immigrants should be included as they too are speakers of a minority language in their current society, and that their language may show contact-induced differences similar to other HS (see, e.g., [3,14]). In this article, I do not present arguments supporting either side of this issue. However, I include first generation immigrants in the group of HS from the 1930s and 1940s, as Haugen does not separate these speakers from the others in his material. His description and discussion of AmNo grammar are thus based on a heterogeneous group of AmNo speakers. Still, Haugen provides a complete list of his informants and to which generation they belong. This list reveals that the majority are in fact second or later generation speakers of AmNo, thus unquestionably HS. I therefore assume that Haugen's overall

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[2] The collection of data is still ongoing as of the time of this writing (early 2017), and the corpus will be expanded in the future.
[3] Bokmål is one of the two written standards of Norwegian. See [26,27] for discussion of the Norwegian language situation.
[4] Proper nouns, fixed expressions, and repetitions within the same immediate utterance have been excluded from the count, and for words with a potential lexical overlap between English and Norwegian, I have used the sound files to determine whether they have an English-like or a Norwegian-like pronunciation, and sorted them accordingly.

findings represent a typical heritage speaker, and I rely on Haugen's evaluations and commentaries as an authentic description of AmNo at the time.

A second concern, especially relevant when doing diachronic comparisons of the two corpora, is the fact that there is no established family link between the two groups of speakers. As far as we know, the speakers in CANS [7] are neither the same speakers, nor the children of the speakers in Haugen [6], meaning that we lack information about their input and competence throughout life. Nevertheless, based on the CANS speakers' ages and locations, we can assume that the group of speakers discussed by Haugen represent the parents/grandparents from whom the CANS speakers learnt AmNo, and thus the grammar discussed by Haugen represent the input that the CANS speakers received. In other words, even if the two corpora are not directly connected in terms of family relations, a comparison of the two will still show the general development of AmNo over these years.

A brief comment should also be offered regarding the new corpus and the data drawn from it. As an online corpus, CANS is not fixed in the same way as other corpora and may be subject to additions, updates, and improvements. In practice, this means that the details of the corpus may change over time. The data presented and discussed in this article were drawn from the corpus in April 2016, and I have not considered any later updates. In addition, random searches have demonstrated that a few English items are incorrectly not tagged "x". In order to make the data employed in this article as clear as possible, these data are *not* included in the numerical description above, but I will occasionally use them as examples of specific phenomena. A footnote is provided in these specific cases.

In Section 5 and onwards, I compare the data collected by Haugen and in CANS and present changes in the patterns of language mixing within noun phrases. Before going into this material, I will briefly introduce the theoretical background for the article in the next section, as well as a description and illustrative examples of what can be considered the *typical* or *main* pattern of language mixing in AmNo noun phrases. This will serve as the foundation for investigating potential changes.

4. Theoretical Background

4.1. Language Mixing

In this article, I employ the term "language mixing" to describe the phenomenon under investigation, namely the occurrence of English items in AmNo.[5] This type of mixing is what Myusken [28] (p. 3) refers to as insertion, i.e., the "insertion of material […] from one language into a structure from the other language", and occurs quite frequently in AmNo noun phrases, forming a recognizable pattern where English nouns appear with Norwegian determiners and suffixes in a Norwegian word order [1,4]. Examples of this are presented in (1a–c), repeated here as (2) for convenience.

2.	a.	det	andre	**crew**-et	[6] (p. 571)
		the.N	other	crew-DF.SG.N	
		'the other crew'.			
	b.	eg	fekk arbeid	på **railroad**-en	[6] (p. 590)
		I	got work	at railroad-DF.SG.M	
		'I got a job at the railroad'.			
	c.	ikke	mange	**party**-er	[6] (p.587)
		not	many	party-INDF.PL.M/F	
		'not many parties'.			

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[5]   The terms "code-switching" and "borrowing" are also frequently used to describe this phenomenon. See [1] for discussion of these terms and how they relate to each other.

From a formal perspective, there are two main ways of approaching and analyzing language mixing: to posit special constraints to account for mixing data [29,30], or to assume that mixing is constrained by the same principles as monolingual speech [31–37]. In the literature, the latter approach is referred to as a Null Theory [31] or constraint-free approach to language mixing [33].

I assume that Null Theory should be the null hypothesis. However, key empirical insights from the other model appear too essential to be overlooked. Myers-Scotton [29] observes that one of the languages involved is more prominent in cases of language mixing. This is referred to as the Matrix Language (ML), and it provides both word order and functional morphemes in the mixed utterances. The other language(s), the Embedded Language(s) (EL), can only contribute content items. I argue that an exoskeletal model, which I will employ in this article, can account for these asymmetric contributions and at the same time be a Null Theory of language mixing. Although I acknowledge this empirical asymmetry, an essential distinction is that I nevertheless do not adopt Myers-Scotton's notion of ML and EL as theoretical primitives. Instead, I use the terms "main" and "secondary" language quite informally as descriptive or observational terms.

4.2. Exoskeletal Approaches to Grammar

To analyze these data, I employ a late-insertion exoskeletal model. The term "exoskeletal" unites a family of grammatical analyses [38–48]. These works may differ in terms of how they account for details in the syntactic structure and its derivation, but the shared, fundamental core is the assumption that abstract syntactic structures are generated independently of the lexical items that will realize them. These approaches are all motivated by monolingual data, meaning that they are not specially designed to handle language mixing, but do nevertheless prove to be good analytical tools for bilingual grammars. The specific model employed in the current article relates mainly to the works by Borer [31–43], Åfarli [44], Lohndal [46,47], and Marantz [38,39]. Additionally, the current approach also incorporates insights from Distributed Morphology (DM), e.g., [49–51], especially concerning the process of late insertion, which I will discuss below. In DM, the lexicon is split into three separate lists: syntactic terminals, vocabulary items, and encyclopedic information. The encyclopedia holds "world-knowledge", which is not relevant for the grammar, and thus is not discussed in this article. The first and second lists, however, are important in the late-insertion exoskeletal model and how language mixing is analyzed.

The first list holds abstract syntactic components, which are used to build structures, forming a syntactic frame or template for the sentence. There are two different types of terminals in this list: roots and functional features or feature bundles. The properties of roots and how they are structured in the syntax is a much-debated question (see, e.g., [52]), however not one that I will delve into here as it is not crucial for the purpose of the current discussions and analyses. Importantly, roots are considered devoid of any grammatical features. Roots also therefore lack a lexical category, which is instead syntactically assigned. Following Marantz [39], Arad [53], Pylkkänen [54], and Embick and Marantz [55], I assume that the category is assigned by combining the root with a category-defining head, constituting a complex I will informally refer to as the stem. Moreover, I assume that roots have some core yet underspecified phonological and semantic properties (cf. [53]).

Functional features are the second type of syntactic terminals in this list, and they are considered properties of the abstract syntactic structure. Moreover, features in this context are restricted to formal morphological features, and these may be bundled in different projections.

Phonological content is provided in the process of Spell-Out, or in DM, Vocabulary Insertion. In this process, vocabulary items, or phonological exponents, from the second list are accessed and inserted. For the two types of syntactic terminals, this process is radically different. Following Arad [53], I assume that a root alone is unavailable for Spell-Out and can only be phonologically realized in combination with a category-defining head. In other words, the stem is spelled out as one unit. This position in the structure emerges as relatively open, with few restrictions for insertion, meaning that content items from any language and of any kind may in principle be inserted.

Spell-Out of functional features or feature bundles, on the other hand, is a more restricted process, regulated by the Subset Principle:[6]

> 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 grammatical 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.
>
> Halle [56]

In other words, insertion of functional exponents is a competitive process, where the exponent that best matches the features specified in the syntactic terminal wins and is inserted. However, the exponent cannot be specified for any features that are not represented in the structure. The structure in (3) serves as a simplified illustration of this process.

3.
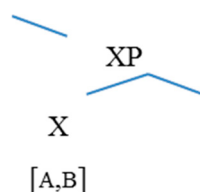
Here, the phonological exponent of X should be the best possible match to the feature bundle [A,B]. In case a complete match is available, this will rule out any alternative exponents specified for only [A] or [B]. Furthermore, an exponent with the specifications [A,B,C] would not be allowed for insertion at this terminal, as the feature [C] is not part of the syntactic structure.[7]

These different restrictions on Spell-Out of functional and substantial material will capture the empirical asymmetry in language mixing: content items from any language can be inserted in the stem position, whereas the most appropriate functional exponents typically are provided by the language of the syntactic frame. Hence, content items from any language are predicted to acquire the functional properties of the language specifying the syntactic frame. Notice, however, that this does not mean that structures bear language tags in our grammars. Instead, structures are composed of functional features, and a specific language is recognized by the features that are active in the language and how they are combined [59]. In other words, when describing something as a Norwegian structure, I mean a structure composed of features in a combination that it is typically associated with Norwegian.

In the next subsections, I will introduce the structure of the AmNo noun phrase (DP) and the typical mixing patterns seen in AmNo to demonstrate how a late-insertion exoskeletal model offers an insightful analysis of these data.

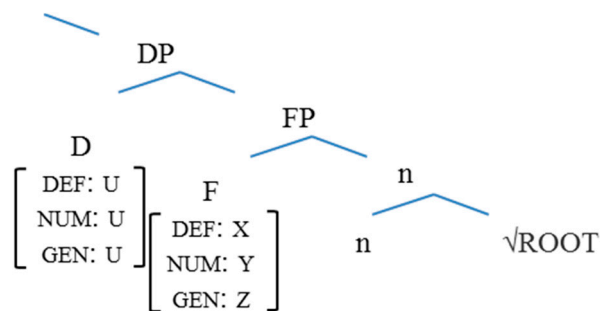*4.3. The Structure of (American) Norwegian Noun Phrases*

Norwegian is the main language in AmNo and provides the structural frames. In this section, I will therefore introduce and discuss the Norwegian DP structure and thereafter employ this framework in an analysis of mixed AmNo noun phrases.

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[6]　Terminals holding functional features or feature bundles are referred to as morphemes in the DM literature.

[7]　The mechanisms presented here imply Underspecification, which plays an important role in DM. The basic assumption is that vocabulary items are underspecified for syntactico-semantic features. Hence, one vocabulary item can spell out several syntactic positions, but in cases where multiple exponents compete for the same position, the more specified one is inserted. As pointed out by an anonymous reviewer, other studies have shown that bilinguals simultaneously activate elements from both languages, and a model has been proposed in which multiple elements may be present simultaneously in a position in the linguistic structure, referred to as co-activation or blends. See [57,58] for discussion of such an analysis.

Norwegian DPs, like Scandinavian DPs in general, can be quite complex, and they have been thoroughly studied in various works [60–62]. The obligatory components of the Norwegian noun phrase are the stem (i.e., the root together with its categorizer), one (or more) functional projections above the stem, and finally a D layer.[8] Norwegian nouns are inflected for three functional categories: definiteness, number and gender, which will be recognizable through affixes and associated words in the noun phrase. The basic structure employed in this article is presented in (4) (see [4] for a more elaborate discussion of the different projections in this model, or [62] for an in-depth study of Norwegian DPs in general).

4.

$$
\begin{array}{l}
\text{DP} \\
\quad\diagup\;\diagdown \\
\text{D} \qquad\quad \text{FP} \\
\begin{bmatrix} \text{DEF: U} \\ \text{NUM: U} \\ \text{GEN: U} \end{bmatrix}
\quad\diagup\;\diagdown \\
\qquad \text{F} \qquad\quad \text{n} \\
\qquad \begin{bmatrix} \text{DEF: X} \\ \text{NUM: Y} \\ \text{GEN: Z} \end{bmatrix} \quad\diagup\;\diagdown \\
\qquad\qquad\qquad \text{n} \qquad \sqrt{\text{ROOT}}
\end{array}
$$

At the bottom of this structure is the stem, which is composed of a root and a category-defining head, in this case a nominalizer. Following from the discussion in the previous subsection, I assume that the root needs to be merged with such a categorizer in order to be spelled out.

Immediately above the stem, we find a functional projection (F) holding a bundle of the features gender, number and definiteness. In the literature, there are various alternatives as to how these are structured, for example with two [62] or three separate projections [63]. For the purpose of the analyses in the current article, however, such a detailed structure is not necessary. Moreover, the AmNo data exploited here do not provide new insight into the division of the functional features in the structure, so number and definiteness are combined into one projection. The most debatable issue in (4) is presumably gender, as a notable part of the literature argues that gender is a property of the nominalizer, thus part of the nominal stem [62,64,65]. Language mixing gives reason to argue that gender is positioned higher in the structure. Consider, for instance, English derived stems like *settlement*, *township*, and *building*, which are attested in the AmNo material [6–8]. Assuming that the derivational suffixes are realizations of the nominalizer, n, these data show that stems are available for mixing. Thus, if gender were considered a property of the stem, we would not expect the pattern where English stems are mixed into AmNo and assigned to different gender categories.[9]

I thus assume that the stem is generally the item being drawn from the secondary language in language mixing, and that gender is positioned in the higher functional structure of the Norwegian DP together with number and definiteness. The interplay between the functional features in F will determine which functional exponent is most appropriate for insertion. Furthermore, in a Norwegian DP the stem complex obligatorily moves to F, possibly due to some nominal feature, meaning that the exponent of F will materialize as a suffix on the noun stem [62].

On top of the noun phrase is a D projection, holding a feature bundle of the corresponding unvalued functional features. These get their valuation through a probe-goal relation (Agree) between

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[8] The Norwegian DP may also include weak quantifiers, adjectives, pre- or post-nominal possessors and post-nominal prepositional phrases. A discussion of these is beyond the scope of the current article. See [62] for details.

[9] An alternative analysis could be that in case of language mixing the speaker has established two separate entries for nouns in their list of vocabulary items, one without gender (the English version) and one with gender (the Norwegian version). Due to the uneconomical status of this analysis, I will not pursue it.

D and F.[10] Noun phrases constituting arguments in Norwegian typically require an overt realization of the DP domain. This is accomplished either by moving FP to Spec-DP, or by inserting a separate determiner or demonstrative in D (see [62] for discussion).[11] The latter alternative results in the phenomenon known as double definiteness, i.e., the co-occurrence of definiteness in the determiner and in the suffix. In phrases involving an adjective or a weak quantifier, double definiteness is obligatory as FP is prevented from moving to the DP domain by intervening projections [62].

4.4. Typical Mixing Patterns in AmNo Noun Phrases and How to Analyze Them

Since Norwegian is the main language in AmNo, we can expect to find mixed noun phrases with a Norwegian structure and Norwegian functional exponents into which English stems are incorporated. This is, in fact, the pattern described by both Flaten [20] and Haugen [6]:

> Some words are, indeed, used without any appreciable difference in pronunciation, but more generally the root, or stem, is taken and Norse inflections are added as required by the rules of the language.
>
> Flaten [20] (p. 115)

> A single form is usually imported and is then given whatever endings the language requires to make it feel like a proper word and to express the categories which this particular language requires its words to express.
>
> Haugen [6] (p. 440)

Moreover, this is also the main pattern of mixing in the most recently collected material [4]. As discussed above, this pattern is predicted by the exoskeletal model: AmNo speakers produce structures with functional features typical for Norwegian, the main language. The Subset Principle requires these to be spelled out by the most appropriate exponents, namely the Norwegian functional exponents. The stem, on the other hand, is drawn from English, and acquires Norwegian functional properties by being inserted into such a structure.

Some examples are shown in (5), where English stems occur with a Norwegian indefinite article (5a), or with a Norwegian functional suffix and in a Norwegian word order (5b–d). Note that even though the noun phrase alone is shown here, these DPs are all part of larger Norwegian utterances.
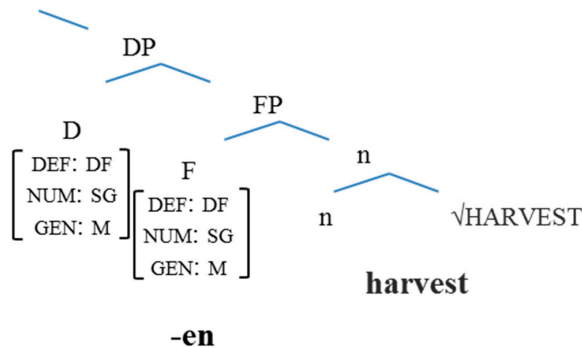
5.   a.   et   rent   **towel**   [6] (p. 601)
                a.INDF.SG.N   clean.INDF.SG.N   towel
                'a clean towel'.

      b.   **harvest**-en   [6] (p. 579)
                harvest-DF.SG.M
                'the havest'.

      c.   **field**-a   [6] (p. 575)
                field-DF.SG.F
                'the field'.

      d.   **trunk**-en   min   [6] (p. 603)
                trunk-DF.SG.M   my
                'my trunk'.

---

[10]   In cases involving a weak quantifier or an adjective, these will be generated in separate projections between D and F and will also have unvalued corresponding features. See [62] for discussion.

[11]   Note that Julien [62] proposes a separate projection for demonstratives. However, for convenience, I analyze both determiners and demonstratives as exponents of D (see also [66]).

The exoskeletal model serves as a good analytical tool for these cases of mixing, and as an example, the structure of (5b) *harvesten* 'the harvest' prior to movement of the stem complex is presented in (6).

6.

DP

D
$\begin{bmatrix} \text{DEF: DF} \\ \text{NUM: SG} \\ \text{GEN: M} \end{bmatrix}$　FP

F
$\begin{bmatrix} \text{DEF: DF} \\ \text{NUM: SG} \\ \text{GEN: M} \end{bmatrix}$　n

n　√HARVEST

harvest

–en

The structure generated in (6) is a typical Norwegian structure, where feature bundles composed of definiteness, number, and gender are present in F and D, and in (6) the features of D have already been valued by Agree with F. The structure also shows the inserted phonological exponents (boldfaced). The mechanisms are as follows: the English lexical item *harvest* has been inserted into the stem position, which is possible since this position does not have strict requirements for insertion. The functional feature bundle in F, on the other hand, is spelled out by a Norwegian exponent offering a complete match with the relevant features: definite, singular, masculine. In the next step (not shown here), I assume that the stem obligatorily moves to F, yielding the complex form *harvesten*, and that this complex subsequently moves to Spec-DP in order to fulfil the interpretability requirements of the DP domain in Norwegian (see [62]).

This brief overview of the analysis of the typical mixing pattern in AmNo noun phrases serves two purposes. First, it demonstrates that the late-insertion exoskeletal model is a good analytical tool for analyzing this type of language mixing. See also [1,4] for a more in-depth discussion and analysis of the typical mixing pattern in AmNo. Second, this discussion is relevant as the basis for investigating potential diachronic changes in language mixing, which is the topic of the following sections.

5. Diachronic Change

In this section, I compare data from Haugen [6] and CANS [7] and show that diachronic changes can be found in the mixing patterns. Due to the limits of this article, I will not discuss the DP exhaustively, but focus on how gender, number, and definiteness are realized by suffixes on the noun stem or on determiners or demonstratives in D. The data are discussed separately: Haugen in Section 5.1, and CANS in Section 5.2. In the former subsection, I also include a brief introduction to how gender, number, and definiteness are typically realized in a Norwegian structure.[12] Please recall that when referring to specific examples, data from Haugen [6] are accompanied by the page number where the examples can be found, and data from CANS [7] by the informant code.

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[12]　Notice that this article discusses the data on a population level, considering the two corpora as two different stages in the development of AmNo. There are without a doubt individual differences in both groups, and studying individuals would possibly yield additional insights. However, discussing changes on a population level, as in the present article, will provide a general overview of potential changes and their development, which is beneficial to a study on the individual level in the future.

5.1. Haugen (1953)

5.1.1. Gender

Gender in Norwegian is non-transparent. This means that one cannot tell the gender of a noun from the phonological or semantic properties of the noun itself. Instead, gender is revealed by affixes and associated words.[13] Previous studies have documented and mapped the gender distribution of nouns in both non-heritage Norwegian [69] and in AmNo [6,70–73]. Without going into the details of these studies, they all establish that masculine is the predominant gender of Norwegian nouns, accounting for 50% or more of nouns, whereas feminine and neuter each cover a smaller percentage, which may wary across different dialects.

In mixed AmNo phrases, English nouns are also assigned to one of the three genders in Norwegian, despite the fact that English nouns do not have gender.[14] Table 1 shows the distribution in Haugen's material.

Table 1. Gender distribution among English nouns in Haugen (1953).

Haugen [6]	
M	71.6%
F	1.6%
N	8.2%
Alternating gender	18.6%

M: Masculine; F: Feminine; N: Neuter.

Haugen bases these numbers on a sample of 317 noun stems in his material. All three genders are used, and similar to the distribution of the native Norwegian vocabulary, masculine is the most frequent gender. In this selection, 59 nouns, or 18.6% of the total, vacillated between genders, which is not surprising considering that many nouns are assigned different genders in different Norwegian dialects (see, e.g., [75]).

5.1.2. Number

Plurality is typically expressed as a functional suffix both in Norwegian and in English, and the Norwegian plural suffix additionally varies according to gender. In Haugen's [6] material, English nouns in plural phrases typically occur with a Norwegian suffix. In fact, Haugen states that a loanword "almost universally [was] given the most common plural ending of the gender to which it had been assigned" [6] (p. 450). Some examples are provided in (7).

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13   Notice that there is discussion in the literature concerning whether the definite suffix in Norwegian is a marker for gender or rather for declension class [67,68]. I assume that the suffix expresses gender, and will analyze it accordingly.

14   The interest of this article is the distribution across the different genders, and not the process of how an individual noun is assigned a specific gender. This presumably relies on a number of factors not addressed in the present article, such as phonology, conceptual content, convention, and it can vary among different varieties of Norwegian. See [61,74] for an approach that is compatible with the late-insertion exoskeletal model.

7.   a.   **piec[e]**-ar   [6] (p. 450)
          piece-INDF.PL.M

     b.   **creek**-ar   [6] (p. 450)
          creek-INDF.PL.M

     c.   **bluff**-er   [6] (p. 563)
          bluff-INDF.PL.F

     d.   **field**-er   [6] (p. 757)
          field-INDF.PL.F

     e.   **team**-   [6] (p. 450)
          team-INDF.PL.N

     f.   **store**-   [6] (p. 598)
          store-INDF.PL.N

However, one English inflectional form is attested in Haugen's material, and that is the plural suffix *-s*. In accounting for the usage of this suffix, Haugen splits the speakers into two groups: pre-bilingual borrowers and childhood bilinguals. Pre-bilingual borrowers are those who acquired English in adulthood, and are not considered "true" bilinguals. Haugen suggests that these speakers were not aware of the plural value of *-s*, consequently producing cases where the *-s* is present both in singular and plural, e.g., in *cookies* (used in both SG and PL), and with Norwegian suffixes in addition, e.g., *car-s-ar* 'car-PL-INDF.PL.M' and *bean-s-en* 'bean-PL-DF.SG.M' [6] (pp. 450–451). Haugen concludes that these speakers took the *-s* to be part of the noun stem.

The second group, the childhood bilinguals, occasionally uses the *-s* in its correct plural function and as a replacement for a Norwegian alternative. This is, according to Haugen, limited to indefinite cases, and foreshadowing the diachronic development, Haugen comments that the usage "naturally increased as time went on" [6] (p. 451).

5.1.3. Definiteness

As discussed above, definiteness in Norwegian is expressed both in F and in D. Due to the stem complex obligatorily moving to F, the exponent of F in a definite phrase materializes as a functional suffix on the noun stem, commonly called the definite article. The realization of D, on the other hand, can be fulfilled either by FP moving further to Spec-DP or by spelling out D with a separate determiner or demonstrative.

Concerning definiteness, Haugen gives two clear restrictions for AmNo: "Whether words were singular or plural [. . .] they had to add the N[orwegian] *definite article* under appropriate circumstances" [6] (p. 451) and "E[nglish] *the* would not be acceptable" [6] (p. 451). In other words, in definite phrases, realization of Norwegian functional exponents is obligatory. Some examples are given in (8).

8.   a.   **railroad**-en   [6] (p. 590)
          railroad-DF.SG.M

     b.   **field**-a   [6] (p. 575)
          field-DF.SG.F

     c.   det **crew**-et   [6] (p. 571)
          the.N crew-DF.SG.N

In the next subsection, I consider the more recently collected data and show how some of the patterns and restrictions discussed by Haugen have changed.

5.2. Corpus of American Norwegian Speech

This section provides data from CANS [7] showing patterns of language mixing deviating from the ones attested in Haugen [6]. The basis of the discussion is the 1034 English nouns occurring in a Norwegian context in CANS, see Section 3.2. above. Thus, due to the relatively limited amount of data in the corpus, the following presentation serves primarily to describe a trend of diachronic change.

5.2.1. Gender

When accounting for gender distribution in the most recent AmNo material, I have considered all singular forms where gender is revealed by the indefinite article or the definite suffix. Although plural forms are also sensitive to gender, these are excluded due to the syncretism of plural masculine and feminine in many Norwegian dialects and in the written standard, Bokmål. What remains is a sample of 292 nouns. Their distribution is presented in Table 2.[15]

Table 2. Gender distribution among English nouns in Corpus of American Norwegian Speech (CANS).

CANS [7]	
M	66.1%
F	6.5%
N	6.2%
Alternating gender	21.2%

Similar to Haugen's findings presented in Table 1, the category of alternating gender in Table 2 includes the nouns that vacillate between genders. This group covers roughly one fifth of the nouns, whereas 66.1% of the nouns are masculine, 6.5% feminine and 6.2% neuter.[16]

Comparing these numbers with earlier material, the distribution of gender appears to be relatively stable; see Table 3.[17] Generally, around 70% of the nouns are masculine, whereas feminine and neuter each are assigned to less than 15% of the nouns. The group of nouns with alternating genders in the most recent material is quite large, which may indicate some uncertainty in the gender system (see [73] for discussion). However, as there is no clear developmental pattern or obvious diachronic change, the question of gender will not be discussed further in this article.

Table 3. Development of gender distribution among English nouns in American Norwegian (AmNo).

	Flom [68]	Haugen [6]	Hjelde [69]	CANS [7]
M	71%	71.6%	70.7%	66.1%
F	5%	1.6%	10.5%	6.5%
N	16%	8.2%	15.7%	6.5%
Alternating gender	8%	18.6%	3.1%	21.2%

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[15] This distribution concerns English nouns mixed into AmNo. For gender distribution among Norwegian nouns in CANS, see [72,73].

[16] The numbers are based on tokens in the selection. Counting types instead would provide a slightly, but not radically, different picture with 79% masculine, 7.6% feminine, 7.6% neuter and 5.7% alternating gender.

[17] Notice that Hjelde's [71] numbers for feminine and neuter are slightly higher than in the other distributions, which may be due to the fact that Hjelde isolated one specific dialect in his study.

5.2.2. Number

As discussed above, Haugen [6] separated his informants into two groups: pre-bilingual borrowers and childhood bilinguals. All of the speakers represented in CANS were born in the US or Canada and belong to the latter group, and similar to Haugen's findings for this group, both Norwegian plural suffixes and the English plural suffix *-s* are used by the CANS speakers. Some examples are given in (9), where (9a,b) show phrases with the Norwegian suffixes, and (9c–f) show cases with the English suffix.

9.   a.   ti   **kid**-er   [7]; portland_ND_01gm
              ten   kid-INDF.PL.M/F

        b.   **boss**-er   [7]; coon_valley_WI_06gm
              boss-INDF.PL.M/F

        c.   mange   **lawyer-s**   [7]; sunburg_MN_03gm
              many   lawyer-PL

        d.   fem   **dialect-s**   [7]; portland_ND_01gm
              five   dialect-PL

        e.   andre   **tool-s**   [7]; sunburg_MN_03gm
              other   tool-PL

        f.   alle slags   **pill-s**   [7]; westby_WI_02gm
              all kinds of   pill-PL

In light of Haugen's [6] study, the fact that both Norwegian and English plural suffixes are attested in CANS is not surprising. What is interesting as a possible sign of diachronic change, however, is the distribution of these two realizations. Haugen does not provide any quantitative measures of the distribution, but since loanwords "almost universally" were given Norwegian plural suffixes, we must assume that the English plural suffix was used in a clear minority of cases. In CANS, on the other hand, this picture is reversed. Out of all 175 plural phrases involving an English noun, 103 are realized with the English plural *-s*, compared to 37 cases with the Norwegian suffix. The remaining 35 phrases are realized without any plural suffix, which I will return to below. Among the cases with the plural *-s*, the vast majority are indefinite phrases, as in the examples in (9c–f) above. However, in CANS [7] the *-s* occasionally occurs in definite phrases. Some examples are given in (10).

10.   a.   alle disse   **minute-s**   [7]; stillwater_MN_01gm
              all these   minute-PL

        b.   disse   **lutefisk dinner-s**   [7]; westby_WI_03gk
              these   lutefisk dinner-PL

        c.   de samme   **gene-s**[18]   [7]; flom_MN_02gm
              the same   gene-PL

---

[18]   This phrase is not included in the count described in Section 3.2, due to being part of a repetition.

The pattern in (10) is not found in Haugen [6], and the attestations in the new corpus are not frequent (10 attested examples). A common property is, nevertheless, that in addition to the plural suffix *-s*, they have a Norwegian exponent of definiteness in the higher projection, D.[19]

A third pattern, not mentioned by Haugen, is plural phrases without any suffix at all. This pattern is found primarily in indefinite cases, as shown in (11).

11.	a.	fem seks	**hour_**	[7]; chicago_IL_01gk
		five six	hour	
	b.	flere	**store_**	[7]; westby_WI_03gk
		more	store	
	c.	mange	**memorial_**	[7]; webster_SD_01gm
		many	memorial	

It is, however, challenging to provide a reliable estimate of the prevalence of such cases, since they are often impossible to confirm as plurals. The examples in (11) are given away by their quantifiers.[20]

5.2.3. Definiteness

Concerning definiteness, the majority of the relevant cases in CANS [7] behave the same way as described by Haugen [6] (and expected in a Norwegian structure): they receive the definite suffix as expected, and the determiner or demonstrative is present in relevant cases [4]. Nevertheless, two patterns of change are found.

The first pattern of change is omission of the functional suffix. Among definite singulars, 9 phrases occur without the definite suffix. Some examples follow in (12).

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[19] One phrase may, based on its context, be considered an instance where the *-s* occurs alone in a definite phrase: *hun har tickets* 'she has the tickets' ([7]; coon_valley_WI_02gm), but it is the sole example of its kind.

[20] Two possible definite cases are also attested: *disse garter snake_* 'these garter snake' ([7]; sunburg_MN_03gm) and *disse deer_* 'these deer' ([7]; stillwater_MN_01gm). However, since the latter is a possible English realization of plural *deer*, and the former is produced after hesitation, this pattern is very limited.

12. a. den   **school_**   [7]; gary_MN_01gm
         that.M/F   school

     b. den   **birdhouse_**   [7]; coon_valley_WI_12gm
         that.M/F   birdhouse

     c. denne   **cheese_**[21]   [7]; blair_WI_04gk
         this.M/F   cheese

     d. den   store **building_**   [7]; chicago_IL_01gk
         the.M/F   big building

     e. det   gamle **stuff_**   [7]; chicago_IL_01gk
         the.N   old stuff

     f. det   norske **settlement_**   [7]; albert_lea_MN_01gk
         the.N   Norwegian settlement

     g. det   første **trip_**   [7]; westby_WI_06gm
         the.N   first trip

     h. **nephew_** min   [7]; portland_ND_02gk
         nephew   my.M/F

     i. **family_** min   [7]; portland_ND_01gm
         family   my.M/F

(12a–g) show cases where the characteristic double definiteness in Norwegian is expected, but definiteness is only expressed by the determiner or demonstrative.[22] The latter two examples, (12h,i), show phrases with a post-nominal suffix where the definite suffix is expected, but omitted.[23] Notice that this pattern is not exclusive to the mixed phrases, as there are examples of the definite suffix being omitted in "all-Norwegian" phrases also, as in (13).[24] This might indicate that the change is not directly connected to the mixed items, but is rather a more general process.

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[21] This phrase is not included in the count presented in Section 3.2, as the item *cheese* is not tagged "x", even though *cheese* is not a common Norwegian vocabulary item.

[22] Notice that the adjectives in question also show that the phrase is definite, as they have the weak inflection -*e*, which is typical for definite cases.

[23] Family terms are often used without the definite suffix, e.g., *far min* 'my father' and *mor mi* 'my mother', but arguably this is not equally common with *nevø* 'nephew', or with *familie* 'family' as in (12h,i).

[24] Norwegian noun phrases can be realized with only a determiner or demonstrative and without the functional suffix, primarily in a formal or written-like style. As these informants are not formally educated in Norwegian, I consider it possible, but not very likely, that they are using this style of speech.

13.   a.   denne   skole_   [7]; harmony_MN_01gk
              this.M/F   school

           b.   den   sommer_   [7]; coon_valley_WI_12gm
              that.M/F   summer

           c.   dette   land   [7]; chicago_IL_01gk
              this.N   country

           d.   dette   brød_   [7]; blair_WI_07gm
              this.N   bread

           e.   disse   nabolag_   [7]; chicago_IL_01gk
              these   neighborhood

The second change is the usage of the English determiner *the*, which was described as unacceptable by Haugen. Although not frequent, 20 cases are attested in CANS where the determiner *the* occurs together with a Norwegian noun or in an otherwise Norwegian structure. Some examples are given in (14), and all these examples are part of a larger Norwegian utterance.

14.   a.   **the**   by   [7]; chicago_IL_01gk
              the   city

           b.   **the**   ungdom   [7]; harmony_MN_01gk
              the   youth

           c.   **the**   gamle kirke   [7]; chicago_IL_01gk
              the   old church

           d.   **the**   penger   [7]; albert_lea_MN_01gk
              the   money

A common property of the phrases in (14) is that they additionally lack the definite suffix, which would have been expected in a corresponding Norwegian noun phrase. However, in about half of the 20 phrases, the English determiner *the* co-occurs with such a Norwegian definite suffix, as in (15).

15.   a.   **the**   gård-en   [7]; gary_MN_01gm
              the   farm-DF.SG.M

           b.   **the**   rest-en   [7]; vancouver_WA_03uk
              the   rest-DF.SG.M

           c.   **the**   andre dag-en   [7]; vancouver_WA_01gm
              the   other day-DF.SG.M

           d.   **the**   samme tid-a   [7]; albert_lea_MN_01gk
              the   same time-DF.SG.F

As CANS enables the researcher to listen to the recordings of these AmNo speakers, it is worth mentioning that the phonology of the determiner varies, and a possible objection could concern the similarities between *the* and the Norwegian neuter determiner *det*. These two may in fact sound quite similar, especially if *the* is pronounced with an alveolar stop instead of a dental fricative. However, two arguments support the analysis of these as English determiners. First, a prenominal determiner would, in most cases, be an alien element in a Norwegian structure without the definite suffix as

in (14) (see also footnote 24). Secondly, the phrases where a prenominal determinative *is* expected in Norwegian, e.g., in the phrases requiring double definiteness, are primarily masculine, as in (15a–c). This means the appropriate Norwegian determiner would be *den*, which is not equally similar to the English *the*.

5.2.4. The Indefinite Article

In addition to the comparisons of Haugen [6] and CANS [7] so far, a brief comment on the indefinite article needs to be added. Haugen [6] does not mention or discuss any generalizations or irregularities concerning the indefinite article. Thus, we must assume that its usage follows an expected Norwegian pattern in Haugen's material. In the new corpus, however, the domain of the indefinite article also seems to be subject to diachronic change, and in parallel to the discussion of definite phrases above, these changes materialize as either omitting the article (60 attested cases) or, in a few cases, using the English *a* (I have found 8 such cases). Some examples are provided in (16), with the relevant context included.

16.	a.	så	du fikk	_ **candybar**	[7]; webster_SD_01gm
		then	you got	a candybar	
	b.	han hadde #[25]	_ stor	**steam engine**	[7]; rushford_MN_01gm
		he had	a big	steam engine	
	c.	det er	_ **bluebird**	som sitter ute	[7]; coon_valley_WI_01gk
		it is	a bluebird	that sits outside	
	d.	**a**	stort hus		[7]; albert_lea_MN_01gk
		a	big house		
	e.	**a**	spiker		[7]; flom_MN_02gm
		a	nail		

These patterns are less frequent than in the definite phrases, but they still do occur.

5.3. Interim Summary of the Findings

In this section, I have compared Haugen [6] to CANS [7] and presented systematic changes between the corpora concerning the categories gender, number, and definiteness in mixed noun phrases. Concerning gender, the main interest in this article is the distribution across the three genders of Norwegian, where no remarkable change was found when comparing today's AmNo to Haugen [6] and other previous AmNo collections. Hence, I decided to focus on number and definiteness in the rest of the article.

In the case of number, Haugen describes two patterns concerning the realization of plurality. In most cases, the appropriate Norwegian suffix is added, but among a subgroup of his informants, the childhood bilinguals, the English suffix *-s* is attested. In CANS both these patterns are attested, and the English plural *-s* is used in most cases. In addition, a new pattern is attested, namely the omission of a functional suffix in plural phrases.

Concerning definiteness, two patterns that are unattested in Haugen's material are found in CANS: definite functional suffixes are omitted in several phrases, and the English determiner *the* is sometimes used instead of a Norwegian alternative. Interestingly, omission of functional material and

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[25]   # marks a brief pause.

usage of English determiners are also attested in indefinite phrases in CANS, which is something that is not discussed by Haugen.

Summing up, the data show two main patterns of change in the AmNo noun phrases:

1.　Omission of functional suffixes, both in plural and/or definite cases
2.　Usage of English functional exponents

In the next section, I will continue the discussion of the patterns that diverge from the typical pattern of mixing in AmNo, and explore how the observed changes can potentially be explained by changes in the underlying grammar. Furthermore, I briefly address some limitations when it comes to investigating diachronic changes in a language like AmNo.

6. Analysis and Discussion

From the perspective of the exoskeletal model, two different scenarios can explain changes like the ones presented in Section 5.2: on the one hand, we could assume that the structure is intact, but the exponents have changed. On the other hand, we could assume that the observed change is a result of the structure itself changing. Both scenarios would disrupt the process of insertion, facilitating realizations diverging from the expected patterns. In this section, I explore these two alternatives separately.

6.1. Change in the Exponent

In the first scenario, we assume that the abstract syntactic frame is intact, and the observed change is caused by the functional exponents and/or their conditions for insertion. Support for this alternative is found in the Missing Surface Inflection Hypothesis (MSIH) [76,77]. This hypothesis was proposed based on evidence from second language acquisition and claims that the absence of overt morphology does not necessarily mean the absence of functional categories in the syntax. Instead, the lack of overtly realized functional exponents may be due to the learner not having established the complete set of exponents or by a failure to meet matching conditions between the exponent and the structure [76]. For the AmNo speakers, we can in a parallel manner assume that the structure is generated as expected, but that their repertoire of phonological exponents and corresponding versatility concerning insertion may be reduced, creating obstacles in the spell-out process.

A key word in the MSIH is avoidance, as the learner is taken to prefer a missing form over a faulty inflection [76]. In other words, when the speaker is in doubt, she will, consciously or not, avoid inserting any exponent in order to prevent mismatches.[26] Considering the AmNo data discussed above, such a strategy of avoidance could explain the cases where the speaker omits functional suffixes. Take for instance the examples in (17), where the Norwegian definite suffix is omitted, but the phrase is still accompanied by a Norwegian determiner or demonstrative.

17.　a.　den　　　**birdhouse_**　　[7]; coon_valley_WI_12gm
　　　　　　that.M/F　birdhouse

　　　b.　den　　　store **building_**　[7]; chicago_IL_01gk
　　　　　　the.M/F　big building

　　　c.　det　　　første **trip_**　　[7]; vancouver_WA_01gm
　　　　　　the.N　　first trip

These data may serve as evidence of the presence of an underlying structure even if the overt morphology is lacking, as argued by the MSIH. The argument follows from the assumption that the

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26　According to Gass and Selinker [78], avoidance is a typical phenomenon in L2 acquisition.

features in D are valued through a probe-goal relation with the features in F: the determiners in (17) vary according to gender, (17a,b) being either masculine or feminine, and (17c) neuter. As the valuation of the gender feature in D requires a corresponding gender feature in F, the gender feature must be specified in F, presumably together with number and definiteness, even if this feature bundle is not realized by a phonological exponent. A possible structure for (17a) is shown in (18). As in similar cases discussed above, the stem complex will move to F obligatorily, but because the functional exponent is avoided in this position, the stem will surface without a functional suffix.

18.
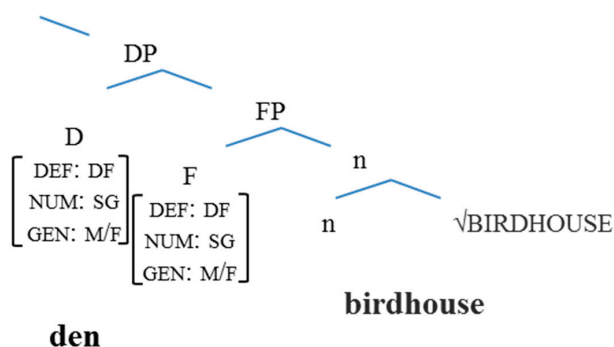
Nevertheless, the hypothesis does not necessarily entail that the speaker does not know the appropriate exponent at all. Such an approach would imply that the speaker never uses the functional suffix, which is easily tested by checking all relevant noun phrases produced by the speaker in question. A random check of the speakers who produced the examples in (17) shows that this implication is strongly questionable. These speakers do produce the definite suffixes in other similar phrases, suggesting that they do have this exponent in their list of vocabulary items. The realization, however, is variable, both in mixed and unmixed phrases, indicating that they are experiencing difficulties with the connection between the exponent and the features in the structure.

Furthermore, usage of the English plural *-s* can also be considered an effect of a similar avoidance strategy: the speaker avoids a potential mismatch, for instance with the gender feature in the Norwegian structure, by using an exponent from their dominant language. This is possible since the inserted exponent, given the Subset Principle, does not have to match *all* features in the feature bundle; matching with a subset is sufficient. In comparison, English does not have an alternative exponent to replace the definite suffix, leaving omission as the only available avoidance strategy. However, the English determiner *the* could be a replacement in cases when the speaker is unsure about which Norwegian determiner to insert.

The MSIH is therefore one potential approach to analyzing changing or diverging linguistic patterns, and incorporating it into the exoskeletal model provides an analysis like the one in (18). Reduced exposure to and practice in AmNo emerge as probable factors that could cause a reduced repertoire of functional exponents and increased uncertainty in how to the use them. However, a concern is that the MSIH lacks clear predictions as to where and how the missing inflections will take place, as well as clear restrictions in the model, and quite problematically, anything could potentially be explained as avoidance. In the next section, I will discuss the possibility that these diachronic changes are caused by certain changes in the syntactic structure.

6.2. Change in the Structure

The second scenario that could explain the observed changes, seen from an exoskeletal perspective, is that the structures themselves may be changing. This has been suggested in studies of other HL, e.g., heritage Russian [18,79], heritage Spanish [80], and heritage German [81], all of which conclude that the heritage language in question seems to have fundamentally different structures than its native

counterpart. Polinsky [18] suggests that the changes she finds between heritage and non-heritage speakers of Russian, and between children and adult HS, are the result of a structural reanalysis of the heritage grammar. She further contends that this is a process taking place over the lifespan of the HS in the absence of consistent input. In a similar vein, Putnam and Sánchez [19] argue in favor of a reanalysis of heritage grammars. In their analysis, the levels of activation for comprehension and production purposes play a crucial role in the development and maintenance of a heritage grammar; difficulties for HS can be due to reduced activation and availability of functional features, complicating the exercise of mapping them in the ways expected in monolingual variants of the language. The result may be a progressive reassembly of the features.

In the case of AmNo and the patterns of diachronic change in language mixing, the data suggest that such a structural reanalysis of grammar could be going on. In the exoskeletal model, this could take the form of features or feature bundles either being rearranged or erased from the structure, which would in turn have consequences for insertion of functional exponents. In many cases, a rearrangement of the structural outfit of the DP would mean that certain Norwegian functional exponents would not fit anymore. Given the Subset Principle, phonological exponents holding features not specified in the structure cannot be inserted, and supposing that the structural outfit of the noun phrase is changed, a Norwegian exponent could turn out to be "too specific", i.e., specified for features not present in the structure and thus blocked from insertion. In fact, changes in the structural composition of the noun phrase would instead allow, or even give preference to, insertion of English exponents.

As an example, consider the usage of the English plural *-s*. A couple of examples are given in (19).

19.	a.	mange	**lawyer-s**	[7]; sunburg_MN_03gm
		many	lawyer-PL	
	b.	fem	**dialect-s**	[7]; portland_ND_01gm
		five	dialect-PL	

Norwegian functional suffixes are typically also specified for gender in the plural, whereas associated words such as adjectives, quantifiers and determiners are not. The use of the English plural inflection could thus be seen as an indication that the representation of gender is diminished for the functional suffixes. If so, the Norwegian exponents for the suffix would be blocked from insertion due to holding a gender feature not specified in the structure, and the English exponent would be the preferred alternative (see [4] for discussion of the plural *-s* in AmNo).

Importantly, the development of reanalyzed structural patterns in a heritage language is described as a gradual process, potentially one where the dominating language gradually takes the place of the original structure, which is a typical trajectory in the development of a minority language, e.g., [19,79]. Lower exposure to lexical items in the heritage language means lower levels of activation of certain functional features. This, combined with an increased exposure to the dominant language, makes the features of the heritage language vulnerable for replacement [19]. In the case of AmNo, English has a dominating role both for the individual speakers and in the community at large. Hence, the possibility of English structures taking over for AmNo structures is not an unlikely scenario. This is also supported by the way in which some changes take form. For instance, the omission of Norwegian definite suffixes complies with an English structure where such suffixes do not exist, and the usage of English functional material suggests that the feature bundles in the structure are designed in such a way that these are considered the most appropriate exponents, following the Subset Principle.

The gradual nature of the change is especially striking in the definite phrases with the English determiner *the*, where some patterns appear to be in an intermediate stage. As discussed in Section 5.2.3., half of the attested phrases occurred with both the English determiner and the Norwegian definite suffix, whereas the second half followed a typical English pattern realizing only the determiner. In the former group of these examples, one can argue that English influence is ongoing, allowing the insertion of an English determiner, but not yet complete, as the Norwegian functional suffix indicates

an underlying typical Norwegian feature bundle, spelled out by a Norwegian functional exponent. In the latter group, however, the influence of English is more pronounced as these examples follow a typical English DP pattern. In fact, as I will argue below, these examples may be described as English structures with Norwegian stems incorporated into them. Some examples are given in (20), where (20a,b) represent the intermediate stage and (20c,d) the potential full English influence in AmNo nominal structures:[27]

20.	a.	**the**	gård-en	[7]; gary_MN_01gm
		the	farm-DF.SG.M	
	b.	**the**	rest-en	[7]; vancouver_WA_03uk
		the	rest-DF.SG.M	
	c.	**the**	by	[7]; chicago_IL_01gk
		the	city	
	d.	**the**	ungdom	[7]; harmony_MN_01gk
		the	youth	

Possible structures for the two stages of mixing in (20) are shown in (21) and (22). The former shows the intermediate stage, represented by (20a), and the latter shows a case where a Norwegian noun is inserted into an English structure, as may be the case in (20c). Notice also that (21) and (22) show structures prior to movement, and that the stem complex will move to F.

21.
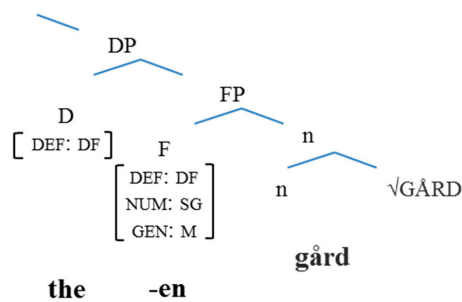
22.

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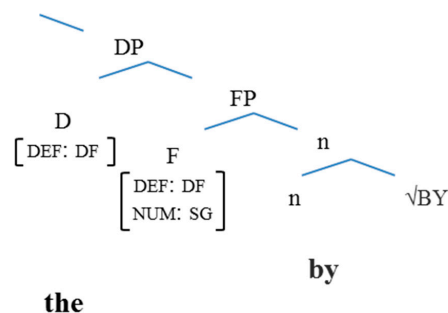
[27] An alternative approach suggests that these are cases where the Norwegian determiner has been relexified by the English determiner *the*. Even though the process of relexification may be a considerable factor in language development and change, I argue that this is not plausible in these specific cases as a (Norwegian) determiner would not typically be expected in cases like (20).

In both (21) and (22), the feature bundle in D is reduced compared to its Norwegian counterpart, allowing the insertion of the English determiner. The main difference is found in F, where gender is presumably a key component. If a gender feature were present in the underlying structure, Norwegian functional exponents would be preferred over the English alternatives. However, if the structure has been reanalyzed and the gender feature is weakened, then the Norwegian exponent would be blocked, since inserting exponents specified for features other than those present in the structure would constitute a violation of the Subset Principle. Hence, I assume that the gender feature is preserved in F in the intermediate cases like (21), whereas in cases like (22), the displacement of the Norwegian structure by English has progressed further, eliminating the gender feature. The structure in (22) may now be considered an English structure where a Norwegian noun stem is inserted.

Parallel to the discussion in Section 6.1. above, positing changes in the syntactic structure is one possible approach to analyzing diachronic changes in AmNo. Considering its language environment over the past century, combined with the change going in a more English direction (e.g., without definite suffixes and with English functional exponents), it appears promising to analyze the changes as a structural reanalysis due to influence from English. Nevertheless, the two scenarios for change are not necessarily mutually exclusive. On the contrary, they may be two parallel trajectories to language change, and the observed change may be the result of a combination of the two.

Notice, however, that my discussion of changes in AmNo is based on a relatively limited sample of mixed noun phrases, and future expansions of CANS will bring new data, potentially corroborating the patterns discussed in this article. Studies of individual speakers and of diachronic changes in other domains of the grammar would also provide a clearer picture of the development and the potential impact of English in the structural reanalysis of AmNo.

6.3. The Nature of the Change

This article is primarily concerned with the explanation of the observed diachronic changes in AmNo as possible effects of changes in its grammar. However, a related question concerns the historical and sociolinguistic conditioning of these changes. As this is not the main focus of the current article, I will not go into an elaborate discussion of this question, but there are some crucial limitations to be addressed when investigating diachronic changes in a language like AmNo.

Cross-linguistic influence from the dominating language, English, has already been introduced and discussed in Section 6.2. In addition, changes in heritage grammars are often considered to be the result of incomplete acquisition or attrition [14,16–18,80]. Incomplete acquisition suggests that the HS, due to being introduced to the dominant language, experience a delay or break in the acquisition of the heritage language, hindering them from developing it in the same way as monolingual speakers of that variety [16,17]. Attrition, on the other hand, refers to a weakening or loss of linguistic competence that the speaker once mastered [14,18].

In the case of AmNo and its development over the past decades, there are some factors preventing us from determining which of these scenarios best reflect the linguistic situation. As already discussed in Section 3, speakers described in both Haugen's [6] material and in CANS [7] are descendants of immigrants who came to North America prior to 1920, and the corpora thus enable a comparison over a span of decades. The lack of (established) relationship between the speakers in the two corpora, also discussed in Section 3, is nevertheless a limiting factor. In order to study an effect of incomplete acquisition carefully, one needs data about the input of the learner, and a study of attrition requires data from the early production of the speaker, neither of which are available from the two corpora under consideration here. Since there is no established relationship between the speakers in the two corpora, we cannot study the younger speakers' input to evaluate their acquisition. Moreover, as the speakers in CANS were already adults and elderly people at the time of recording, we are unable to determine whether their grammars have been stable throughout their lives or if they have lost linguistic skills due to attrition.

Also, in order to properly investigate cross-linguistic influence, more data would be required, documenting for instance the speakers' competence in their dominant language. This is not provided by any of the corpora. Nevertheless, as discussed above, the dominance of English both in the individual speakers and in the larger language community suggests that the speakers of AmNo would be experiencing an influence from English to some degree.

Comparing the two corpora thus means studying HL in a retrospective fashion. On the one hand, this enables a study of different stages in its development, but at the same time potential conclusions are limited due to the lack of a relation or direct link between them. As already mentioned in Section 3, however, based on the speakers' ages and places of origin, we can argue that the speakers from the 1930s and 1940s represent the type of input that the CANS speakers received, and thus establish an indirect link between them. In addition, as the speakers in Haugen [6] in the vast majority of cases used loanwords with the appropriate Norwegian inflection, the diverging patterns attested in CANS can in fact be considered a diachronic development in AmNo. Nevertheless, as the developmental trajectory cannot be traced for the individual speakers, these diachronic changes are best described as tendencies of change in the language community.

7. Conclusions

This article has investigated the heritage language AmNo and whether its patterns of language mixing are persistent over time. A comparison of mixed AmNo noun phrases from the 1930s and 1940s [6] and the present [7] shows that the overall pattern of language mixing is stable, but some systematic diachronic changes are attested. The purpose of this article has thus been twofold: first, to describe the changes, focusing on changes in the exponence of number and definiteness, and second, to explore potential changes in the underlying grammar which could explain the observed changes.

The diachronic changes in the categories number and definiteness can be summed up as two main patterns: omission of functional exponents and usage of English functional exponents such as the plural suffix *-s* and the determiner *the*. These patterns are studied based on an exoskeletal approach to grammar where the main component is a separation of the abstract, syntactic structure and the phonological exponents realizing it. The article then discusses two possible scenarios for how to account for the observed changes: they could be due to changes in the phonological exponents, i.e., their conditions for insertion into the syntactic structure, or they could be due to a change in the underlying syntactic structure itself. Both alternatives would disrupt the process of insertion, and they are not necessarily mutually exclusive. However, based on the observed patterns of change in the data, I argue that a structural reanalysis of AmNo grammar is occurring. Moreover, the article also discusses why one should be careful when drawing conclusions concerning diachronic changes in AmNo. Although the two corpora under consideration provide valuable insights into AmNo at two different stages in its development, they are nevertheless not directly connected in terms of family relations between speakers, and the nature of the changes is therefore not easily determined. Future studies of individual competences, however, will presumably provide more knowledge of changes in the underlying grammars, and how they can explain the observed patterns.

In a broader context, the present article shows that the patterns of language mixing are stable over time, although not completely resistant to change. The observed changes in AmNo support this analysis, suggesting that (heritage) grammars may change under conditions of reduced input and activation. This takes place as a gradual reanalysis of the structures under the influence of the dominant language, and may be reinforced by a diminishing repertoire of functional exponents. Moreover, to reach insights into the nature of change in heritage grammars, input, competence, and gradual change should be sufficiently documented and taken into consideration.

Conflicts of Interest: The author declares no conflict of interest.

Abbreviations

Glossary of Linguistic Codes Used in the Glosses

DEF	Definiteness
DF	Definite
F	Feminine
GEN	Gender
INDF	Indefinite
M	Masculine
N	Neuter
NUM	Number
PL	Plural
SG	Singular

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