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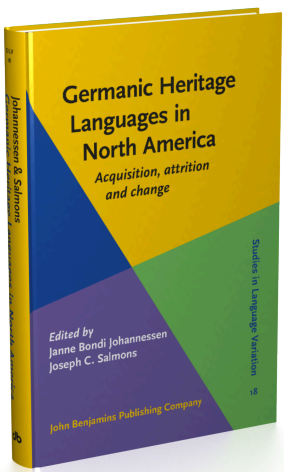

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Attrition in an American Norwegian heritage language speaker

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This paper investigates the language of one person: an elderly bilingual lady who speaks Heritage Norwegian in addition to English. Her heritage language production reveals language that is different both from what we know of Heritage Norwegian from other sources and from European Norwegian, and which is taken to be the result of language attrition. Her language is therefore well-suited for studying the regression hypothesis (Jakobson 1941), i.e., whether what is learnt first is retained longest, and whether what is learnt last is lost first. After having established the order of acquisition, her morphological and syntactic production is investigated. The paper examines the noun-phrase-related categories of definiteness suffix, indefinite determiner, compositional definiteness and pronouns, as well as clause-related structures: verb second (V2) word order with topicalization of two kinds of adverbials, V2 with negation, and target V3 in subordinate clauses. The main result is that the regression hypothesis is supported but more for clause-related categories than noun-phrase-related ones. One specific finding is that V2 occurs in place of light, simple preposed adverbials, but not with heavy, complex ones.

Keywords: Norwegian, attrition, acquisition, regression hypothesis, verb second, noun phrase grammar

1. Introduction[1]

Heritage language is often different from the original mother language. Questions concerning what factors cause what kind of effects have resulted in much research in recent years. Concepts such as incomplete acquisition and attrition have been central

1. I am grateful for constructive comments from two anonymous reviewers, as well as from Arnstein Hjelde, Joseph Salmons and Per Erik Solberg. I would also like to thank the participants at the Second Workshop on Immigrant Languages in America, Fefor, Norway, 2011, for

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(see for example Larsson and Johannessen 2015a, b, Montrul 2008, Montrul et al. 2008, Polinsky 2008, 2011, Putnam and Sánchez 2013, Rothman 2009).

The present paper focuses on language attrition caused, it is assumed, by many years of absence of exposure to and use of the heritage language. Schmid and Köpke (2008) define attrition thus: "The term first language (L1) attrition refers to a change in the native language system of the bilingual who is acquiring and using a second language (L2). This change may lead to a variety of phenomena within the L1 system, among which are interferences from the L2 on all levels (phonetics, lexicon, morphosyntax, pragmatics), a simplification or impoverishment of the L1, or insecurity on the part of the speaker, manifested by frequent hesitations, self-repair or hedging strategies." Although it will not be the main focus of this paper, it is pointed out that the attrition effects that are studied here cannot be direct translations or influences from English.

The data presented in this study should not, then, be seen as examples of incomplete acquisition, but as language loss in an individual. An alternative question is whether language loss in an individual follows the reverse path of the acquisition process. This idea is called the regression hypothesis, expressed by Roman Jakobson (1941) and investigated by, amongst others, Renate Born (2003) and Merel Keijzer (2007, 2010). The basic claim is that language loss is the mirror image of acquisition. What is learnt early is lost late, while what is learnt late is lost early.

As pointed out by Keijzer, most research on the regression hypothesis has compared the language of young children with that of aphasics. Since the latter group may also have other cognitive problems it is not ideal for this purpose (Keijzer 2010: 10). Further, while acquisition is gradual, language loss as a result of aphasia is sudden. Also, while acquisition involves the language system, aphasia typically affects only part of it. In addition, some researchers have focused on the regression hypothesis with L2 learners. Keijzer focuses on L1 speakers: Dutch speakers who had immigrated to English-speaking Canada after the age of 15 and whose mean age was 66.4, and whose mean length of stay was 43.5 years.

In this paper the regression hypothesis is tested with respect to a heritage speaker, a different kind of informant from the informant types tested in the research reported by Keijzer (2010). This speaker is ideal for testing, since she shows attrition effects in several aspects of her language production. The paper examines the noun-phrase-related categories of definiteness suffix, indefinite determiner, compositional definiteness and pronouns, as well as clause-related structures: verb second (V2) word order with topicalization, V2 with negation, and target V3 in subordinate clauses.

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valuable feedback. (http://www.hf.uio.no/iln/english/about/organization/text-laboratory/news-events/events/2011/feforseminar-norskiamerika.html).

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Section 2 presents the general data and methodology, while Section 3 gives an overview of the relevant features of Norwegian and the age in which they are acquired. In Section 4 the attrition data are presented, and in Section 5 the acquisition and the attrition data are seen relative to each other, while the paper is concluded in Section 6.

2. Data and methodology

2.1 Informant and linguistic evidence

The person whose language is investigated in this paper had not spoken Norwegian for a long time. Daisy, 89.5 years old at the time of the recording in 2010, was born in 1920 in Chicago, had more than 12 years of education, and used to work in a telephone company. Her parents were both Norwegian, born in Østfold and Sunnfjord (East and West Norway, respectively), and had immigrated in 1907 and 1909 as teenagers. Norwegian was spoken alongside English in her childhood home.[2] Her late husband did not speak Norwegian, and neither did her children. However, her father had lived with her until he died 15 years previously, when Daisy was 75 years old. They spoke Norwegian together, and she had not spoken Norwegian since. Daisy had been to Norway on 5–6 short trips.

It was her sons that contacted us when they saw our advertisement where we tried to get in touch with Norwegian-speaking Americans. Daisy, who lived alone in her beautiful house, was charming, attentive, humorous and intelligent. In every way, she came across as being cognitively on top of things. The effects of old age on language have been debated in the literature. Burke and Shafto (2008: 374) mention such factors as general resource deficits (e.g., processing speed, efficiency of inhibition, working memory capacity), and transmission deficits. However, such factors were not visible in Daisy's English language production, which makes it less likely that they would be disturbing her Norwegian language.

However, linguistically, when speaking Norwegian rather than English, she clearly had difficulty. She spoke with long pauses and searched for words. Sometimes she switched to English when she was stuck in the attempt to express something in Norwegian. Importantly, for the purposes of this paper, her Norwegian grammar was clearly different from that of European Norwegians, and of the other fluent heritage American Norwegians we have met. Methodologically, one might argue that we do not know whether her Norwegian language has ever been different. There are no recordings of her speaking Norwegian from ten, twenty, thirty or more years ago. But based on the facts about her childhood linguistic situation and the fact that other American

2. When her maternal grandmother came from Norway to live with them, Daisy was 7. They spoke only Norwegian together. Daisy's Norwegian is definitely the dialect of her mother and maternal grandmother, originating in the town of Moss, Østfold.

Norwegians who still use the language, speak more fluently than her, it will be assumed here that she is an attrited speaker of a heritage language, rather than a person who has never learnt heritage Norwegian properly. The fluency of her intonation, including the realization of the East Norwegian toneme differences, supports this assumption. The extent to which her grammar deviates from the norm must therefore be due to lack of use.

This paper draws data from a recorded conversation with Daisy lasting 30–40 minutes with altogether 6000 words. It consists of an interviewer asking questions that are partly motivated by the need for background information (on family and immigration history) and partly by the need for as much speech as possible, in a friendly and relaxed atmosphere. The conversation is now part of the growing Corpus of American Norwegian Speech (Johannessen 2015).[3] This corpus consists of recordings with transcriptions that are linked to each other. It has a web interface with advanced search possibilities, both with respect to individual suffixes, words and phrases, and to morphosyntactic categories.

During fieldwork in 2010–2012 in the American Midwest the present author met more than a hundred American Norwegian language heritage speakers. They had in common that they had grown up in a family of descendants of Norwegian immigrants arriving in the US before 1920. Many did not know English before they started school, and they were all part of a larger Norwegian community. Most of these speakers were fluent, with only a few features distinguishing their language from Norwegian as it is spoken in Scandinavia. The specific American Norwegian features are especially phonological (for earlier work on American Norwegian phonology, see Hjelde 1992) and lexical (see Johannessen and Laake 2011, forthcoming, and this volume). These speakers, therefore, can be seen as a control group for Daisy, given that it can be argued that Heritage Norwegian is standardized into one single language or dialect (see Johannessen and Laake forthcoming), and that we already know about an array of linguistic features in Heritage Norwegian (see Johannessen and Laake 2011 and this volume, Annear and Speth, Hjelde and Eide, Hjelde, as well as Westergaard and Anderssen, all in this volume).

2.2 Methodology and background material

The main purpose of this paper is to test the regression hypothesis using Daisy as a test case. The paper will investigate whether what she has kept and what she has lost (compared with standard Heritage Norwegian and European Norwegian) can be seen as a scale that reflects the order of acquisition. In order to compare with acquisition, a short overview of what is known about the age of acquisition of some of the main linguistic features in Norwegian is given here. It is based on different works on Norwegian, but also on Swedish – a language so close to Norwegian that the order of acquisition will

3. Available at http://www.tekstlab.uio.no/nota/NorAmDiaSyn/english/index.html.

be the same. Swedish is included since the knowledge of acquisition of Norwegian is limited. A problem is that the studies on acquisition are very different methodologically, so that it is difficult to set up a trajectory of all the features and categories. Below follows a brief description of the sources used in this paper to ascertain the steps of acquisition.

Anderssen (2007) uses recordings of three Norwegian children at the age 1;8.20–3;3.18. This study is used for pronouns and compositional definiteness in the present paper. Only one Norwegian child (1;8.20–3;4) is described in Anderssen (2010), used here for definiteness. Some of these data have also been used by Westergaard and Anderssen (this volume). Bentzen's (2004) study is also based on the recordings of only one child, a bilingual Norwegian American child at the age 2;7.10–2;10.9. This study has been used here for the investigation of word order. The data in Kristoffersen and Simonsen (2012) is on the complete opposite end of the scale, being based on what 6500 parents report about their children's achievements on an online web-form. Their study follows the pattern of CDI (MacArthur-Bates communicative development inventories), see Kristoffersen et al. (2012) for the basic methodology.[4] For each category (for example the present tense suffix) Kristoffersen and Simonsen (2012) present a table of all the reported answers for this category; the answers belong to one of three grades: "not yet," "sometimes" or "often," and with percentages summarized for each monthly age. In the present paper the age that corresponds to the "often" category for more than 50 percent of the children is used as the general age of acquisition for that feature. Their data is used here for the definiteness category, along with Anderssen (2006, 2010). Waldman (2008) uses a corpus of spontaneous speech of six monolingual Swedish children recorded over six years (0;10–7;0). This work is used here for word order in main and subordinate clauses. Westergaard (2005) studies the recordings of three Norwegian children (the same as those of Anderssen 2007) at the ages 1;8.20–3;3.18. Her study is used here for word order together with Waldman (2008) and Wikström (2008). The latter investigates a corpus of the spontaneous speech of one Swedish child 1;1.10–2;10.8.

There are thus vast differences with respect to the amount of data that the literature has employed when assessing the age of acquisition of linguistic phenomena; from one subject to 6500. The way the data has been collected also differs a lot, from

4. The method of using parents' reports of course faces certain problems. Kristoffersen and Simonsen (2012: 25, fn. 4) do not regard it as a problem that dialects differ, while the web form contains only written standard forms. However, when it comes to the grammatical part of their investigation, such problems should not be dismissed. For example, the form asks for present tense suffix by saying (translated from Norwegian): *After some time, children add an -r and say* sover *(sleeps),* spiser *etc., like we adults do. Does your child do this?* (Kristoffersen and Simonsen 2012: 165). In many parts of Norway the present tense form is not formed by adding an *-r* to the stem, but instead a different inflectional paradigm is used (known as "strong" inflection), like *søv* 'sleeps' (vs. standard *sover*). In most parts of Norway the present tense is also expressed without *-r*, as in *huksa* or *huse* (both meaning 'remember').

careful studies of spontaneous speech to lay people's reports on web forms. It is difficult to know whether this has any consequences for the comparisons that will be made in this chapter, but the present author thinks it is worth the attempt, and then later research may confirm or refute the ages of acquisition that have been assumed in this paper. However, where more sources have been available, attempts have been made to compare them and choose the appropriate age. In the next section the studies will be investigated in order to establish at which age which linguistic phenomenon is acquired.

3. Norwegian language and the order of acquisition

In this section those parts of the Norwegian language that are necessary to understand the attrition data are presented. For each feature the age in which this feature is expected to have been learnt is assessed on the basis of the studies reported in Section 2.

3.1 The noun phrase and its categories

The grammar of Norwegian noun phrases is best illustrated by some examples.

(1) a. *en gammel hest*
an.SG.M old.SG.INDEF.M horse. SG.INDEF
'an old horse'
b. *et gammelt hus*
a.SG.N old.SG.INDEF.N house.SG.INDEF
'an old house'

(2) a. *den gamle hest-en*
the.SG.M old.SG.DEF horse.SG.DEF.M
'the old horse'
b. *det gamle hus-et*[5]
the.SG.M old.SG.DEF house.SG.DEF.N
'the old house'

(1a, b) show that an indefinite noun phrase with a preposed adjective has a preposed indefinite determiner. In addition there is gender agreement determined by the noun between the determiner, the adjective and the noun. The adjective is also inflected for number and definiteness, and if singular, the adjective is also inflected for gender.

The examples in (2) show that there is also agreement in the definite form. Importantly, the noun has a definiteness suffix even when the determiner is also

5. The final *-t* in *det* and *hus-et* is not pronounced in spoken language.

definite, and the adjective is inflected for definiteness.[6] This is known as compositional definiteness. The adjective has the same form whatever the gender when the noun phrase is definite, while the determiner also shows gender and number distinctions. For more information on the noun phrase, see for example Julien (2005) and Faarlund et al. (1997).

3.1.1 *The acquisition of the definiteness suffix*

Definiteness in the noun is realized as a suffix (as in *hesten, huset* in (1)), whereas the indefinite form is realized as a bare stem and a preposed determiner. Anderssen (2010), discussing the role of metric structure on the acquisition process, shows that the definiteness suffix is acquired much earlier, viz. a whole year, than the indefinite determiner. She shows that the suffix appears in 63.3% of the contexts in which it would be expected to occur already at age 1;8.20, and that as many as 90.6% of the contexts have the suffix at age 2;3.12 (Anderssen 2010: 157),[7] a result confirmed by Kristoffersen and Simonsen (2012: 109) in their study, with exactly the same age: 2;3. The definiteness suffix is also acquired very early in Swedish (see Anderssen 2006, 2007, 2010 for references).

3.1.2 *The acquisition of the indefinite preposed determiner*

The indefinite determiner (*en, et* in (1)) is acquired a lot later that the definiteness suffix. Looking at Anderssen's data, the indefinite determiner is actually not properly acquired even when her research period ends. The child is at this point 3;3.18, and uses the indefinite determiner in 70% of the expected contexts.

3.1.3 *The acquisition of compositional definiteness*

Noun phrases in Norwegian that contain a modifier (such as an adjective) need a definite preposed determiner in addition to the suffix. This is exemplified by *den … hesten*, and *det … huset* in Examples (1) and (2). In unmodified noun phrases, the definiteness suffix carries both uniqueness and specificity features (cf. Julien 2005), while in modified noun phrases, the definiteness suffix expresses specificity and the preposed definite determiner expresses uniqueness. We have seen that the definiteness suffix is acquired very early, while the indefinite determiner is late. Anderssen (2007) has investigated the acquisition of the definite preposed determiner. It appears that the prenominal definite determiner "is omitted for a very long time" (Anderssen 2007: 264).

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6. Norwegian also allows definite noun phrases without a definiteness suffix on the noun. This can occur in a formal, bookish style, but will be considered ungrammatical here since our informant never enters into this mode of formality or plays with different registers.

7. Those that might want to look at Anderssen's data more thoroughly should be aware that Anderssen (2010: 157) actually gives the file-number as age reference, so the actual age when this file was recorded had to be looked up in Anderssen (2006: 12). I have referred to the second age period here: her files 6–10, which have been recorded from age 2;1.0 to 2;3.12.

Her child informant (who is the same as for the other two phenomena mentioned) still at age 3;3.18 only produced the target compositional definiteness in 18.2% of the cases. This must also mean that the uniqueness feature is acquired late.

3.1.4 *The acquisition of pronouns*

Anderssen (2007) estimates that pronouns are acquired later than the definiteness suffix. This means that both the person category and the uniqueness category are acquired late (Anderssen 2007: 267). Anderssen (2007: 266) shows that her informant Ina reaches the adult ratio of pronouns: nouns (taken by Anderssen to be 45%) at age 2;7.8. She reaches half the amount of that already at age 1;11.22, but it is not until age 2;6.19 that she reaches 75% of the ratio. This is more than three months after comparable numbers for the definiteness suffix.

3.2 Clauses and sentences

In Norwegian, declarative main clauses are V2, i.e., the verb must be in the second position in the sentence, whatever phrase fills the first position. Thus, if a sentence has a topicalized object, the verb must still be in the second position, and the subject has to move, unlike English. This is exemplified in (3):

(3) a. *Mari kjøpte bøker i dag*
Mari bought books today
'Mari bought books today.'
b. *Bøker kjøpte Mari i dag*
books bought Mari today
'Books, Mari bought today.'
c. **Bøker Mari kjøpte i dag*
books Mari bought today
'Books, Mari bought today.'

Negation is expressed as an adverb following the finite verb:

(4) a. *Mari kjøpte ikke bøker*
Mari bought not books
'Mari didn't buy books.'
b. **Mari ikke kjøpte bøker*
Mari not bought books
'Mari didn't buy books.'

In subordinate clauses the standard language does not have V2; instead the verb will be in the third position (V3) if there is also an adverb in the clause, see (5). There are some exceptions to this generalisation both generally in Norwegian and in some dialects, depending on matrix predicate and adverb, respectively (see Julien 2007, 2008, 2009 and Bentzen 2007). The present investigation avoids such cases.

(5) a. *Jeg spurte om Mari ikke kjøpte bøker i dag*
I asked if Mari not bought books today
'I asked if Mari did not buy books today.'
b. **Jeg spurte om Mari kjøpte ikke bøker i dag*
I asked if Mari bought not books today
'I asked if Mari did not buy books today.'

3.2.1 *The acquisition of V2 with topicalization*

Westergaard (2005) shows that by age 2;4 children produce more than 90% of the target word order, i.e., V2, for topicalization constructions of the type (3b). Her study is supported by Bentzen (2004), who looks at the acquisition of verb movement in bilingual first language acquisition. She compares the language production of a child aged 2;7.10–2;10.9. This child overgeneralizes Norwegian word order, as 23.7% of the English non-subject-initial sentences are pronounced with V2 (Bentzen 2004: 163), while only 3.4% of her topicalized Norwegian sentences have the English word order, V3 (Bentzen 2004: 166). We can conclude from her study that V2 is in place for Norwegian by this age.

Westergaard (2005) also refers to a study of Swedish (Platzack 1996: 376), which has found that V2 starts at age 1;9 and is completed a year later. Waldmann (2008: 158–164) shows that three of the four Swedish children he studies have acquired V2 order with topicalization and other non-subject initial elements already before the age 2;0.16. V2 is thus acquired early.

3.2.2 *V2 with negation*

Westergaard (2005) has also looked at V2 with respect to negation. She found that the target order with finite verbs in main clauses, X-FinV-Neg, was acquired by age 2;2.12. One child had the target order for 88.5% of all examples; another had 92.9%. The very early acquisition of this order is supported for Swedish by Waldmann (2008: 146–154). His study of four children shows that three of them have the target word order with both finite and infinite verb w.r.t. negation in more than 95% of the utterances from the time that they start using negation with verbs. This varies between the age of 1;10.04 and 2;7.04.

3.2.3 *Target V3 in subordinate clauses*

Westergaard (2005: 168–174) only looked at children under the age of 3, which made it difficult to study the word order in embedded clauses, since these are known to be acquired late. However, she did find 29 embedded clauses with negation, so these should in principle say something about the word order. Unfortunately, in half of the cases, the negation followed the subjunction directly, thereby rendering it impossible to see whether there was V2 or V3 order. However, there were more examples of clear

violations of the target subordinate V3 order (subjunction-Adv-FinV) all the way up to the age of 3;0.0 than of the target V3. One example is:[8]

(6) **Det er ho mamma som har også tegna*
it is she mommie who has also drawn
'It's mommie who has also drawn.'

These violations show that embedded word order in Norwegian is acquired relatively late. Waldmann's (2008: 221–240) Swedish data show the same; he finds that the main acquisition of the target V3 embedded order takes place between the ages 2;9 and 3;3. Table 1 summarizes the findings in order of ascending age:

Table 1. Linguistic structures and categories and their age of acquisition.

Language construction	Age	Research reference
V2 word order with negation	2;2.12	Westergaard (2005: 140), Waldmann (2008: 146–154)
Definiteness suffix	2;3.12	Anderssen (2006: 12; 2010: 28, 153–172), Kristoffersen and Simonsen (2012: 109)
Pronouns	After 2;3.12	Anderssen (2007: 267)
V2 word order with topicalization	2;4	Westergaard (2005: 231). Also: Bentzen (2004), Platzack (1996), Waldmann (2008: 158–164), Wikström (2008: 98–104)
Indefinite determiner	3;3.18	Anderssen (2006: 12; 2010: 28, 153–172)
Compositional definiteness	After 3;3.18	Anderssen (2007: 264)
Target V3 order in subordinate clauses	After 3;0.0	Westergaard (2005: 168–174), Waldmann (2008: 221–240)

4. Results of the investigation of Daisy's American Norwegian

4.1 Results regarding the noun phrase

4.1.1 *The definiteness suffix*

In this subsection, we will only address noun phrases that consist of a single noun (possibly with some postmodification), but not premodified noun phrases that require agreement and definiteness. These are discussed in Section 4.1.3. The Norwegian system is illustrated in Example (1) (*hest-en, hus-et*).

8. In the rest of the paper, the asterisk is used to indicate that the utterance deviates from the target standard language (adult language and non-attrited language).

Our informant Daisy does use the definiteness suffix, but not in a stable manner. Some of her nouns are given below. In (7) her nouns are correctly marked, but in (8) we see many examples of a missing definiteness suffix. Enough linguistic context is included there to show that the noun should have been marked for definiteness:

(7) Definiteness suffix in accordance with target:
  a. *i krigen*
     in war.DEF
  b. *på rivern*
     on river.DEF
  c. *den kanten* av *byen*
     that part.DEF of town.DEF

(8) Definiteness suffix missing:
  a. **gikk fra telefonkompani neri Texas*
     went from telephone.company down.in Texas
     (expected: *telefonkompaniet*)
  b. **bestefar var fra fjell*
     grandad was from mountain
     (expected: *fjellet*)
  c. **mange har vondt i fot*
     many have pain in foot
     (expected: *foten*)
  d. **en kirke som var i nabolag*
     a church that was in neighbourhood
     (expected: *nabolaget*)
  e. **slutten av parade*
     end.DEF of parade
     (expected: *paraden*)
  f. **jeg gikk i baderom i skip*
     I went to bathroom in ship
     (expected: *baderommet, skipet*)

It should be noted that whenever the definiteness suffix is missing, it is not due to direct influence from English, since English, while it has no definiteness suffix, uses a preposed determiner as exemplified in (9) (compare with Daisy's (8f)):

(9) I went to *the bathroom* in *the ship*.

To quantify Daisy's command of the definiteness suffixes of unmodified noun phrases, the Corpus of American Norwegian Speech has been employed counting the number of common nouns occurring with the prepositions *fra* 'from,' *til* 'to' and *på* 'on,' since preposition phrases often require definiteness. Only those that require definiteness have been counted. Daisy has two nouns with *fra* in the relevant category; one definite and one indefinite. She has seven relevant nouns with *til*, four definite ones.

With *på* she has 13 relevant nouns, nine that are definite. Summarizing these, we find 22 relevant nouns, of which 14 are definite in accordance with the target, yielding 63 percent. (Gender has not been a focus in the count.) It is safe to say that Daisy does not have a full grip of the use of the definiteness suffix.

4.1.2 *The indefinite determiner*

There are some cases of missing indefinite determiners in Daisy that shows that she does not have a full mastery of the indefinite determiner. A few examples where she has used the indefinite determiner in accordance with the target are shown in (10); examples with missing indefinite determiners are shown in (11).

(10) a. *Så mannen min og jeg fikk en apartment*
so husband.DEF my and I got an apartment
'… so my husband and I got an apartment.'

b. *Så var det en kirke som var i nabolaget*
so was it a church that was in neighbourhood.DEF
'Then there was a church that was in the neigbourhood.'

c. *Det er en fisk jeg vil ikke ha i hus*
that is a fish I will not have in house
'That is a fish I don't want to have in my house.'

d. *Han arbeider på et hotell*
he works at a hotel
'He works at a hotel.'

(11) a. **Jeg jobbet på telefonkompani*
I worked at telephone.company
'I worked at a telephone company.'
(expected: *et telefonkompani*)

b. **Det er bare par av oss som gjør det*
it is only couple of us who do it
'There are only a couple of us that do it.'
(expected: *et par*)

c. **Det er hvit bygning som er på banen*
it is white building that is on field.DEF
'It's a white building that's on the field.'
(expected: *en hvit bygning*)

Although Daisy has a few examples that lack an indefinite determiner, there are not many. On the other hand, the recording abounds with target uses of the indefinite determiner. There are 27 occurrences of the common gender article *en* 'a' followed by a singular noun in the Corpus of American Norwegian Speech, all used in accordance with the target, i.e., 100%. A search for indefinite nouns directly following verbs, excluding names and name-like words like *mor* 'mother,' yielded 33 relevant cases, 21 of which are target uses, i.e., 63%.

4.1.3 *Compositional definiteness*

Compositional definiteness was illustrated in (2). It is a very complex construction given that a phrase containing an adjective requires a preposed definite determiner, a definiteness suffix on the adjective and a definiteness suffix on the noun. In addition, the determiner and the suffix must agree in number, gender and definiteness. Our informant Daisy clearly has some problems with compositional definiteness.

(12) a. Lacks determiner: *den*
**andre kanten*
other.DEF edge.DEF.SG.M

b. Lacks determiner: *det*
**norske flagget*
Norwegian.DEF flag.DEF.SG.N

c. Lacks suffix: *bygningen*
**den store building*
the.DEF.SG.M big.DEF building.SG

d. Lacks suffix: *året*
**det samme år*
the.DEF.SG.N same.DEF year.SG

e. Lacks suffix: *nabolagene*
**disse nabolag*
these.DEF.PL neighbourhoods.PL

f. Lacks suffix: *barna*
**de to barn*
the.DEF.PL two children.PL

g. Lacks suffix: *recorderne*
**de gamle recorder*
the.DEF.PL old.DEF records.PL

h. Wrong gender+lacks suffix: *kirken*
**det gamle kirke*
the.DEF.SG.N old.DEF church.SG

i. Wrong gender+lacks suffix: *gangen*
**det første gang*
the.DEF.SG.N first.DEF time.SG

j. Lacks two suffixes: *første*, *gangen*
**de først par ganger*
the.DEF.PL først.INDEF couple times.INDEF.PL

Compositional definiteness is clearly a problem for Daisy. There are hardly any well-formed examples of such noun phrases in the recordings. It is worth noting that noun phrases containing compositional definiteness are very different from English noun phrases, as exemplified in (13):

(13) a. the first time
b. the first times

English noun phrases have no number or gender inflection on the preposed definite determiner or any inflection on the adjective. They have no definiteness suffix; only a plural suffix, which is the same for most nouns.

Daisy's compositional noun phrases are not like the English ones, since most of the time, only one feature is missing; most often the definiteness suffix. She keeps most of the inflection; i.e., agreement marking with respect to definiteness marking on the adjective, and various inflections of the preposed determiner.

Her use of noun phrases with the masculine and neuter singular determiner as well as the plural determiner has also been checked, using the Corpus of American Norwegian Speech (searching for either *den* 'the.M.SG,' *det* 'the.N.SG,' or *de* 'the.PL' followed by an adjective followed by a noun). There were eight of these altogether, and they all lacked one or more suffixes, thus supporting the general findings above.

4.1.4 *Pronouns*

Daisy's use of personal pronouns is fine:

(14) a. *Ho var hjelp*
she was help
'She was a help.'

b. *Hun hadde familie her*
she had family here
'She had family here.'

c. *Han var fra Flekke i Sunnfjord*
he was from Flekke in Sunnfjord
'He was from Flekke in Sunnfjord.'

d. *Han gikk opp til Minneapolis*
he went up to Minneapolis
'He went up to Minneapolis.'

e. *Da fløtte dem til Flekke*
then moved they to Flekke
'Then they moved to Flekke.'

In the corpus of American Norwegian Speech, Daisy uses the third person feminine pronoun *hun* (and its variant *ho*) 'she' 47 times, all, i.e., 100%, in accordance with the target.[9] The other pronouns are also used in a target-like manner.

9. It should be mentioned that in many Norwegian dialects the personal pronouns *han* 'he' and *hun* 'she' are also used with inanimate masculine and feminine gender nouns. This is not the case in Moss, however, which is the town from where Daisy's language clearly originates.

4.2 Clauses and sentences

4.2.1 *V2 word order with topicalization*

In describing Daisy's word order pattern, it can be useful to present them by type, after what syntactic category is preposed. Let us first make the assumption that in order to have a fully working V2 system for all categories, we should expect V2 with simple SVA word order. However, Daisy does some somewhat surprising things. With sentences containing adverbs, we find them intervening before the verb, causing V3 word order, which is not grammatical in declarative main clauses in Norwegian.

(15) a. **Hennes familie også var norsk*
her family also was Norwegian
'Her family was also Norwegian.'
(expected: *var også*)

b. **Vi alle sammen spiste torsk*
we all together ate cod
'All of us had cod.'
(expected: *spiste alle sammen*)

c. **Vi bestandig hadde fisk*
we always had fish
'We always had fish.'
(expected: *hadde bestandig*)

d. **Vi alle sammen spiser lefse*
we all together eat lefse
'All of us eat lefse.'
(expected: *spiser alle sammen*)

With sentence-initial subjects we find, then, that Daisy produces V3 if the adverb is *også* 'also,' *bestandig* 'always' or a quantifier like *alle sammen* 'all, everybody.' We shall see in Section 4.2.2 that if the adverb is *ikke* 'not,' the standard V2 word order is used.

There is one example of a topicalized subordinate subject noun phrase. It does not trigger V2:

(16) **Alle sammen jeg trur gikk på kirke i Voss*
all together I think went on church in Voss
'I think everybody went to church in Voss.'
(expected: *trur jeg*)

Let us turn to preposed preposition phrases. We first present some that have ungrammatical word order. Given what we have just seen, it is not surprising that we find V3 here, with the order PP+subject+verb.

(17) a. **I skolen vi snakte bare engelsk*
in school we talked only English
'At school we only spoke English.'
(expected: *snakte vi*)

b. **I Norge dem ville aldri møte*
in Norway they would never meet
'In Norway, they would never meet.'
(expected: *ville dem*)

In (18), however, we find some target-like seemingly PP-initial sentences.

(18) a. *I Humboldt Park står en vi kaller det*
in Humboldt Park stands one we call it
'In Humboldt Park, there is a, we call it,
statue of Leif Eriksson
statue of Leif Eiriksson
statue of Leif Eiriksson.'
b. *I depression så måtte dem stenge*
in depression then must they close
'In the depression they had to close.'
c. *Etter krigen så kom han tilbake*
after war then came he back
'After the war he came back.'

It is debatable whether the sentence in (18) should be interpreted as a sign that Daisy sometimes has V2 with PP-initial sentences. (18a) is PP-initial and has V2, but it could be that this is due to the subject being too long and heavy to move to the second position, where Daisy has put her subjects in (17). The left dislocation nature of the PPs in (18b, c) means that these clauses are not PP-initial, but light-adverb-initial.

We now turn from preposed PP adverbials to preposed adverbial clauses. Daisy never has the verb in the standard second position in these cases:

(19) a. **Når jeg kom tilbake, jeg kunne ikke gå bak*
when I came back I could not walk behind
'When I came back, I couldn't walk behind.'
(expected: *kunne jeg*)
b. **Hvis det hadde vært oss, vi ville ha…,*
if it had been us we would have
'If it had been us, we would have…'
(expected: *ville vi*)
c. **Når alle norskene kom isammen, dem bestandig snakte norsk*
when all Norwegians came together they always spoke Norwegian
'When all the Norwegians met, they always spoke Norwegian.'
(expected: *snakte dem bestandig*)
d. **Når du går oppe i Wisconsin, du finner mange plasser*
when you walk up in Wisconsin you find many places
'When you go up to Wisconsin, you find many places.'
(expected: *finner du*)

(19) e. *Når vi kom ut i Nordsjøen, vi gikk bak og
when we came out in North.Sea we walked back and
'When we came out in the North Sea we went back and
frem i sengene
forth in beds
forth in our beds.'
(expected: *gikk vi*)

f. *Når vi gikk ner for 17.mai-parade, vi gikk der
when we walked down for 17.May parade we walked there
'When we went down for the 17. May parade, we walked there.'
(expected: *gikk vi*)

g. *Etter krigen kom, så mannen min og jeg fikk en apartment
after war came so husband my and I got an apartment
'After the war had started, my husband and I got an apartment.'
(expected: *fikk mannen min og jeg*)

The last example, (19g), actually contains a left dislocated clause, with a light adverb inserted in the proper topic position. Unlike in (18b, c) above it does not make V2 more accessible this time.

Having seen that light adverbs may have an effect on the choice between V2 and V3 pattern, we now look at some of Daisy's sentences that have preposed light adverbs.

(20) a. *Da fløtte dem til Flekke*
then moved they to Flekke
'Then they moved to Flekke.'

b. *Så var det en kirke som var i nabolaget*
then was it a church that was in neighbourhood
'Then there was a church that was in the neighbourhood.'

c. *Da skjærte jeg*
then cut I
'Then I cut.'

In the Corpus of American Norwegian Speech, Daisy has 14 target occurrences of the adverb *da* 'then' followed by a finite verb (V2), and one non-target followed by a pronoun (V3). This gives her 92% target V2 word order with light adverbs.

Preposed noun phrases functioning as adverbials have V2 order, as in (21). However, notice that (21a) has a left dislocated adverbial with a light adverb in the proper topic position.

(21) a. *Lørdag og søndag så har han fri*
Saturday and Sunday then has he off
'Saturdays and Sundays, he is off.'

b. *En gang imellom var det fra øst*
one time inbetween was it from East
'Sometimes it was from the East.'

Finally, a preposed adverbial question phrase consisting of one question word is included. Question phrases in many dialects do not trigger V2, yielding exactly the word order we see in (22).

(22) **Åssen de sier..*,
how they say
'How do they say…?'
(standard dialect: *sier de*)

Johannessen and Laake (2011, this volume) have shown that many Norwegian Americans have this question word order as part of their heritage variety, just as in the locations their ancestors come from. It is clear that Daisy does not speak those dialects, but her father is from Sunnfjord, an area that does have this word order. It is in principle possible that she has this feature from him (or other people she has known), although she does not have other dialect features from that dialect, so we should be careful to judge it as an attrited feature here.

A search of the Corpus of American Norwegian Speech yielded 16 cases of sentence-initial subordinate clauses by Daisy. Only four of them have a verb in the target second position, after the clause, i.e., 25%. However, there are 92% clauses with fronted light adverbs that do have target word-order. This means that Daisy's grammar distinguishes between the kinds of syntactic categories in the adverbials that are preposed, adverbs versus adverbial clauses.

4.2.2 *V2 with negation*

In (23) we see some examples with a sentence-initial subject and the negation adverb placed according to the target order: after the verb. (23d) shows that Daisy also masters object shift, i.e., that a light pronominal object can occur preposed to the negative adverb.

(23) a. *Jeg er ikke sikkert*
I am not certain
'I'm not certain.'
b. *Vi snakket ikke i sammen*
we talked not together
'We didn't speak together.'
c. *Jeg husker ikke nå hva det var*
I remember not now what it was
'I don't remember now what it was.'
d. *Jeg sier det ikke riktig*
I say it not right
'I don't say it right.'

Daisy's recording in the Corpus of American Norwegian Speech contains 78 occurrences of *ikke*. They all follow a finite verb or a light shifted object, i.e., 100% target use. Note that the number depends somewhat on what is included in the count. Here the count includes all the target occurrences in all clauses. In 4.2.3, we will see that subordinate clauses often have the non-target verb-adverb word order. Such occurrences have not been subtracted from the target results in this section. It can be concluded that Daisy has full mastery of the word order with negation in main clauses, which is surprising given the ungrammatical examples with the other adverbs in 4.2.1. We should also notice that this word order is not in any way like English, which has do-support with lexical verbs, like *snakke* 'talk,' *huske* 'remember,' and *si* 'say' (cf. (23b, c, d)).

4.2.3 *Target V3 in subordinate clauses*

Section 3.2 described the general pattern of subordinate clauses in European Norwegian, which is V3 in the case that there is an adverb in the clause. Daisy's subordinate clauses in (24) show that she does not normally have the target word order ((24f) is an exception to her general pattern).

(24) a. **Når du skal ikke forstå, da begynner du å lære*
when you shall not understand then begin you to learn
'When you are not meant to understand then you begin to learn.'
(expected: *ikke skal*)

b. **Jeg studerte noe ganger hvorfor dem lærte ikke*
I wondered some times why they learnt not
'I wondered sometimes why they didnt learn.'
(expected: *ikke lærte*)

c. **Det er en norsk mat som jeg har aldri likt*
it is a Norwegian food that I have never liked
'That is a kind of Norwegian food that I have never liked.'
(expected: *aldri har*)

d. **Det er en fisk jeg vil ikke ha i hus!*
that is a fish I will never have in house
'That is a kind of fish that I will never have in my house.'
(expected: *ikke vil*)

e. **Jeg trur hun arbeider nå for Macys*
I think she works now for Macys
'I think she works for Macy's now.'
(expected: *nå arbeider*)

f. *det er et par koner […]som still snakker norsk*
it is a couple women who still speak Norwegian
'There are a few women that still speak Norwegian.'

We notice first that the structure in the sentences in (24) is not English. English has *do*-support with negated lexical verbs, something which cannot be said of Daisy's Norwegian sentences, as illustrated in (24b), which has the lexical verb *lære* 'learn' with negation. Larsson and Johannessen (2015a, b) discuss such structures and conclude that they do not represent English word order or a generalized V2 word order. Instead, they assume that what is at stake is incomplete acquisition of syntactic features. This can be supported by the fact that such constructions are learned very late. In her case she probably never learned them properly.

In the Corpus of American Norwegian Speech there are six hits for sentences with a subjunction and an adverb in the subordinate clause (it is more difficult to search for sentences without subjunctions, so that was not done). Out of these, only one has the target order, somewhat surprisingly with an English adverb: *still,* (24f). The other five have the non-target V2 order, similar to the examples shown in (24a–e). This means that only 17% target have the word order.

However, importantly, V3 word order is one in which European Norwegian and Heritage Norwegian seem to differ, see Taranrød (2011) and Larsson and Johannessen (2015a, b). The latter argue that the V-Adv order found in many Heritage Norwegian speakers is best explained as a result of incomplete acquisition, i.e., that it has probably never been learnt, and hence cannot be lost. While Daisy's subordinate clauses fit with the general pattern, they should not be seen as a sign of attrition.

5. Daisy's results relative to the acquisition data

5.1 Noun-phrase related categories

Starting with the noun phrase and its categories, we have seen that there is a hierarchy in acquisition in which the definiteness suffix is learnt first, followed by pronouns, then indefinite determiners, and finally compositional definiteness, as depicted in Table 2.

There is thus a hierarchy that we can compare with Daisy's language. The definiteness suffix is missing in several of Daisy's utterances. She does use it, but in no way in every target context. On the other hand, she does not use it wrongly, for example in a context where the indefinite determiner would have been more appropriate. We saw that her indefinite determiners are mostly in place, although there are some examples of missing determiners. Pronouns, however, present no problems, and the discourse seems fluent in the choice of pronoun and lexical noun phrase. We insert these categories into Table 2 in order of how well the categories are mastered by Daisy.

Table 2. The hierarchies of acquisition of categories and structures related to the noun phrase.[10]

Noun-phrase-related acquisition	Age	Daisy's noun-phrase-related production	Numbers
Definiteness suffix	2;3.12	Pronouns	100%
Pronouns	After 2;3.12	Indefinite determiners	63%
Indefinite determiners	3;3.18	Definiteness suffix	63%
Compositional definiteness	After 3;3.18	Compositional definiteness	0%

Table 2 shows that there is no one-to-one correspondence between acquisition and well-formed production. If the regression hypothesis worked blindly, Daisy's most perfect categories would coincide with those that were acquired earliest. There is a discrepancy between the early acquisition of the definiteness suffix, and Daisy's poor production of it in the right target contexts. However, it could depend on what is counted. Here it is missing definiteness suffixes in target contexts that have been the focus of attention. On the other hand, the focus could instead have been the phonological expression of the suffixes, in either non-target or target positions. So given the methodological problem with this category (and the same with indefinite determiners), it is hard to conclude for these categories. However, compositional definiteness is different. It seems always to fail at least once in each noun phrase in Daisy's recordings. It is also the category that is acquired last. This gives some support for the regression hypothesis.

5.2 Clause-related categories

The syntactic problem structures that have been investigated are related to verb and adverb word order. We saw in Section 3.2 that target V2 with negation is acquired early, while word order with other topicalized elements are learnt a bit later. What is clearly much harder is target V3 in subordinate clauses, which is learnt beyond 3 years of age. These are inserted as a new column in Table 3.

Looking at Daisy's production, first, she does not have V2 in declarative clauses with adverbs, i.e., target SVA, (15). We then looked at topicalized clauses with a fronted PP. These are not produced according to the target. (17) showed two relatively simple sentences, both of which were V3. There were three PP-initial clauses with V2, (18). However, the first one had such a long and heavy subject that it could not have been moved further towards the front of the clause. The PPs of the other two were actually not sentence-initial, but left dislocated, followed by a light adverb each. The

10. Tables 2 and 3 are formatted differently than Table 1, in that they have no horizontal lines across the whole table. This is because the two columns in each of the table are independent of each other. The left-hand side shows the general order of acquistion according to the literature, and the right-hand side shows Daisy's production in terms of success towards the target. Ideally, both colums of each table should have the grammatical categories in the same order, if her production mirrored exactly the order of acquisition.

sentences in (20) show that Daisy nearly always (92% of the occurrences with topicalized *da* 'then') has V2 after light adverbs, something that is also supported further in yet another example of left dislocation followed by a light adverb. The seemingly PP-initial V2 sentences have the target word order, but it can be concluded that this is due to reasons other than the fact that there might be a PP in the topic position. The sentences that contain preposed clauses, like those in (19), have V2 in only 25% of the cases. Daisy has no discrepancies from the target, however, with respect to negation. Her negated sentences, like those in (23), have V2 word order. With respect to V2, it can be concluded that Daisy masters this word order for simple clauses, both those that have a light adverb in the topic position and those that are negated. There are approximately 60 negated main clauses by Daisy, all with a target word order. She does not master V2 with PP topics or with clausal topics. Daisy's target V3 sentences nearly all have non-target V-Adv order (but see Section 3.2.3 and below). The results are compared with the age of acquisition for each type in Table 3. However, children do not use complicated structures like preposed adverbial clauses at the time that they learn V2 with topicalization, so this cell is left blank here.

Table 3. The hierarchies of acquisition and production of clause-related structures.

Clause-related structures	Age	Daisy's clause-related production	Percent
V2 word order with negation	2;2.12	V2 word order with negation	100%
V2 word order with topicalized light adverbs	2;4	V2 word order with topicalized light adverbs	92%
V2 word order with topicalized subordinate clauses		V2 word order with topicalized subordinate clauses	25%
Target V3 order in subordinate clauses	After 3;0.0	Target V3 order in subordinate clauses	17%

When it comes to clause-related structures there is a total correlation between the acquisition hierarchy and Daisy's production hierarchy. Larsson and Johannessen (2015a, b) discuss similar problems with target V3 subordinate word order in American Norwegians that are otherwise fluent speakers. We argue there that this is due to incomplete acquisition of the last step in the syntactic development of the speakers. If those fluent speakers fell victim to incomplete acquisition, there is no reason to assume that this is not also the case for Daisy. In that case, we should not count the failure of target V3 in subordinate clauses as attrition, and we should not compare it directly to the acquisition stage.[11] However, notice that in any case, the fact that target V3 is acquired very late in the child is a kind of support for the incomplete

11. Notice that attrition and incomplete acquisition are not the same, although some scholars (such as Putnam and Sánchez 2013) suggest that they are interrelated. The present author follows the same ideas as those in Larsson and Johannessen (2015a, b), where, if something is incompletely acquired, it is not learnt properly, which can be seen in non-consistency in language production. If, on the other hand, a linguistic feature of a speaker is attrited, it has existed and been used consistently by that speaker, but is subsequently lost.

acquisition hypothesis; other things in the environment may cause the child not to learn the last steps within a development. Our conclusion here, though, does not hinge on the target V3 pattern, since we have also looked at V2, where there does indeed seem to be a mirror-image correlation between the order of acquisition and attrition.

6. Conclusion

This paper has tested the regression hypothesis on the language of a Norwegian language heritage speaker, Daisy, whose language, it is argued, is attrited. Daisy's language has been studied with respect to four noun-phrase-related categories and four clause-related categories. While Daisy's production of some categories is almost identical to European Norwegian and Heritage, the production of other categories is clearly very different. Two categories that show no attrition effects are those of pronouns and of V2 word order with negation.

The eight categories have been investigated with the aim of finding when they are acquired and in which order, consulting relevant literature. If the non-affected categories are those that are learnt first, and the attrited categories are those that are learnt last, there is a mirror-effect between the orders of acquisition and attrition, and the regression hypothesis is supported.

My findings are not totally clear, but the general picture supports the regression hypothesis. The noun phrase-related categories definiteness suffix and indefinite determiner are somewhat problematic in how they should be counted. These two categories therefore cannot be decisive for the conclusion. Pronouns, on the other hand, are assumed to be acquired early, and are also fully in place for Daisy. Compositional definiteness is assumed by the acquisition literature to be learnt very late, and this is also a category where Daisy's language differs a lot from the target.

Amongst the clause-related categories, all appear to have mirror-image correlation between acquisition and attrition. V2 word order with negation is acquired very early, and is also in place in Daisy's language. V2 with topicalization of adverbials, which is supposed to be learnt at a later stage, also is less like the target in Daisy's speech. She distinguishes between sentences whose initial adverbial is a light adverb and those whose adverbial contains a heavy phrase, for example a preposition phrase or an adverbial subordinate clause. The fourth clause-relevant category studied here is target V3 in subordinate clauses. This is a category that is learnt very late, and is also one in which Daisy produces extremely few target-like examples. Larsson and Johannessen (2015a, b) have analyzed this type as it has been produced by other, fluent Norwegian Americans, as incomplete acquisition. It should therefore not be regarded here as attrition. The main conclusion of the present paper is, all the same, that it is possible to see the relationship between acquisition and attrition data as support for the regression hypothesis.

Finally, a note of comparison should be made to the study of Keijzer (2010). She looks closely at two noun-phrase-related morphological features (plural suffix and diminutive suffix). While she finds some mirror-image correlations when performing an elicitation test, her free speech recordings, which are most comparable to the study conducted here, shows hardly any non-target results. She does, however, refer to a more comprehensive study where more morphological and also syntactic categories were tested (Keijzer 2007). There, negation behaved similarly for her two groups, learners and emigrants, while V2 did not (Keijzer 2010: 15). These results are interesting when compared with the clause- related ones here: Negation is straightforward for both groups, while target V2 should be divided into several categories depending on what syntactic category sits in the topic position. Clearly more research is needed on this.

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