Argument placement in Norwegian

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abstract

This paper gives an overview of the results from three data collection sessions that took place in Norway in 2018, that specifically targeted the placement of subjects, objects and particles in main clauses. The results reveal a fairly high amount of variation in the placement of phrasal subjects with respect to negation, and phrasal objects with respect to verb particles, while the placement of pronouns show little or no variation. We place these results in a wider context of variation within the North Germanic languages, and furthermore explicitly describe the structure of the collected data, and how to access it in the online Nordic Word Order Database.

[1] introduction

The modern North Germanic languages, Norwegian, Swedish, Danish, Icelandic and Faroese, have all developed their own argument placement patterns. In this article, we focus on the placement of subjects and objects in Norwegian, and present the results from a series of elicitation experiments that were run in 2018, with in total 63 participants from different parts of Norway (mainly Eastern and Northern Norway). The material is available online in the database Nordic Word Order Database (NWD). The core patterns that were investigated were the placement of (i) pronominal and NP subjects with respect to sentence adverb (including negation), (ii) pronominal and NP objects with respect to negation, (iii) pronominal and NP objects with respect to verb particles, and (iv) the relative order of subjects and objects in the midfield of the clause. The pronouns to be discussed are all light first person, third person or reflexive personal pronouns.

The most striking characteristics of Norwegian argument placement is the strong influence of form, here, NP versus personal pronoun. In a string that includes a pronoun and a sentence adverb or a verb particle, the pronoun will typically precede the sentence adverb or particle. If the argument is a full phrase (NP/DP)[1], the argument typically follows the sentence adverb or particle. In the case of pronominal arguments, there are only few exceptions to this generalization, while there is more variation in the placement of phrasal arguments. We give examples of the core patterns in (1–3) below. The examples in (1) illustrate the unmarked placement of subjects relative to negation. In (2), the the order of objects and negation is given. The examples in (3) illustrate the typical ordering of objects and particles.

(1) a. I går   tok ikke læreren   bussen til byen.   (Neg>Subj$_{NP}$)
       yesterday took not   teacher.DEF bus.DEF to   town.DEF
       'Yesterday, the teacher did not take the bus to town.'
    b. I går   tok han   ikke   bussen til byen.   (Subj$_{PRO}$>Neg)

       yesterday took he   not   bus.DEF to   town.DEF
       'Yesterday, he did not take the bus to town.'

(2) a. Politiet   arresterte ikke ranerne   i går.   (Neg>Obj$_{NP}$)
       police.DEF arrested   not   robber.PL.DEF yesterday
       'The police did not arrest the robbers yesterday.'

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[1]   We will refer to all phrasal arguments with a lexical noun as a head as NPs. Arguments realized as personal pronouns will be referred to as pronouns.

b. Politiet   arresterte   dem   ikke   i går.   (Obj$_{PRO}$>Neg)
police.DEF   arrested   them   not   yesterday
'The police did not arrest them yesterday.'

(3) a. Vaktene   kastet   ut   studenten   i går.   (Part>Obj$_{NP}$)
guard.PL.DEF   threw   out   student.DEF   yesterday
'The guards threw out the student yesterday.'

b. Vaktene   kastet   ham   ut   i går.   (Obj$_{PRO}$>Part)

guard.PL.DEF   threw   him   out   yesterday
'The guards threw him out yesterday.'

The effect of form is most categorical in (2) above, that is, in the phenomenon standardly referred to as object shift (Holmberg 1986); NP objects never shift across sentence adverbs, and absence of pronominal object shift tends to have straightforward effects on interpretation (e.g., added contrast/focus). As for subject placement (1), NP subjects are sometimes placed before sentence adverbs, especially in cases when the sentence adverb is not a negation (Faarlund et al. 1997; Nilsen 1997; Bentzen 2007; Åfarli 2010). Similarly, NP objects quite frequently appear before verb particles, although the unmarked word order has the order in (3a), where the NP object follows the particle (see Sandøy 1976; Åfarli 1985; Svenonius 1996; Larsson & Lundquist 2014). Both with respect to NP subject placement relative to sentence adverbs, and NP object placement relative particles, it is often unclear what governs the choice of linear order. Regarding the placement of pronominal arguments, information structure effects are quite clear when the pronoun appears to the right of the adverb or particle: pronouns following adverbs/particles are preferably interpreted as contrastive.

In all of the North Germanic languages, there is a difference in the placement preferences for pronominal and phrasal arguments, but in Swedish, Danish, Icelandic and Faroese, the difference is generally more subtle, and more restricted by syntactic function (i.e., subject and object). For example, both Swedish and Danish have strict ordering restrictions for objects and particles, independent of form (see Lundquist 2014 and references therein). Danish, Faroese and Icelandic all have similar ordering restrictions on definite phrasal subjects and pronominal subjects: subjects precede sentence adverbs (see, e.g., Svenonius 2002; Vangsnes 2002). With the data in the Nordic Word Order Database, we can investigate in more detail how the form (pronoun vs. NP) and syntactic function (subject vs. object) affect linear order.

The structure of the article is the following. In Section 2, we give a short introduction to the syntax of Norwegian, with a focus on the linear order of constituents on the clausal level. Section 3 gives a description of the experiment. Section 4 reports on the participants and the data collection. In Section 5, we present the results in Section 5. Section 6 is a discussion.

[2] the clause-level syntax of2orwegiann, with a focus on subject placement, object placement and particle placement

Like all the modern North Germanic languages, Norwegian is a VO language, with quite systematic asymmetric V2: the finite verb is placed in second position in main clauses, while non-finite verbs surface inside the verb phrase, after sentence adverbs and the subject, but before objects and verb particles (Diderichsen 1946; Holmberg & Platzack 1995; Vikner 1995). In embedded clauses all verbs are located inside the VP. An extensive overview of the exceptions to the asymmetric V2 pattern in Norwegian is given in Westendorp (2021), but see also Julien (2007) and Wiklund et al. (2009) for overviews of patterns and variation in the North Germanic languages. In (4), we give examples of a main clause and an embedded clause, in a prototypical sentence with the subject in clause-initial position. In the main clause (4a), the subject is followed by an auxiliary in the V2 position. In the embedded clause (4b), the verb stays in the verb phrase, as diagnosed by the negation preceding the

verb.

(4) a. Læreren   vil   ikke [VP kjøpe en   ny   bil i morgen].   (Main cl.)
        teacher.DEF will not buy   a   new   car tomorrow
        'The teacher will not buy a new car tomorrow.'
   b. Han   sa   [CP at læreren   ikke [VP vil   kjøpe en   (Embedded)
        he   said that teacher.DEF not will   buy   a
        ny   bil   i morgen]].
        new   car   tomorrow
        'He said that the teacher will not buy a new car tomorrow.'

In clause structures like (4), there is a strict linear order for the arguments and sentence adverbs. In the main clause in (4a), the subject and the object are separated from the midfield/TP by the finite and non-finite verb.[2] In the embedded clause in (4b), the subject and the negation are linearly adjacent, but for reasons still unknown, subject–adverb inversion is highly marked, if not impossible, unless a sharp contrastive reading of the subject is provided. This sharply contrasts with the order of subjects and negation in main clauses like (1), where an NP subject most typically follows the negation.

[2.1] *Subject placement*

Most of the research on midfield subject placement in Norwegian has focused on the placement of subjects with respect to negation, rather than to other midfield adverbs, see for example Eide (2002), Østbø Munch (2013), Bentzen (2014b), Anderssen et al. (2018) and Olsen (2019) (but see also Åfarli 2010 for discussion of other adverbs). This is mainly due to the fact that negation is the most frequent midfield adverb, but also due to the fact that it is relatively easy to compare negation placement cross-linguistically. In several of the studies, the term *subject shift* has been used to describe the variable placement of subjects (see more below).

Above we stated that non-contrastive pronominal subjects precede negation and other adverbs in the midfield, but this is a slight simplification. As Østbø Munch (2013) shows, the opposite order is not hard to find in spoken language corpora. Østbø Munch finds as much as 17.5% post-negation pronominal subjects in her study of negation placement in the Nordic Dialect Corpus (Johannessen et al. 2009), and far from all of these are contrastive. There are a couple of factors that may explain the relatively high amount of Negation>Subject$_{PRO}$ order. First, in most dialects, negation has reduced monosyllabic forms (*ke/kje/tje*) in addition to the disyllabic *ikke/ikkje/ittje*. The monosyllabic form is more likely to appear with auxiliaries, copulas and modal verbs, where the negation cliticizes to the verb, giving rise to more or less lexicalized forms like *ha'kke* ('have not'), *må'kke* ('may not') and *æ'kke* ('is not'); see Lindstad (1999) and Torgersen & Garbacz (2020) for discussions of limits of cliticized negation in Norwegian. A cliticized negation may intervene between the finite verb and a post-verbal subject, but, in the majority of the dialects, it may also surface after the subject, as we will see shortly. (See Østbø Munch 2013 for a study of a dialect where the negation quite strictly cliticizes to the verb.)

Another factor that influences subject placement is the type of speech act. Subject pronouns following negation seem to be more common in *yes/no*-questions than in declarative main clauses (see Urbanik & Svennevig 2019 for discussion). This may be due partly to an increased likelihood of a contrastive interpretation of subjects in questions compared to declaratives, but it may also be related to a high frequency of auxiliaries in these type of questions, leading to higher use of a monosyllabic negation *(æ-/ha-/må-/bli'kke du* ...?). Yet, it is important to point out that the order Subject>Negation is still unmarked even in questions with auxiliaries and truncated negation, and speakers vary between

orders (5a) and (5b) below:

(5) a. E=kke   du   lei   av det?   (Tromsø dialect)
      are=not$_{CL}$ you   tired of it
  b. E   du=kke   lei av det?

      are   you=not$_{CL}$ tired of it
      'Aren't you tired of it?'

Acceptability judgment studies on the placement of subject (Anderssen et al. 2018) suggest that native speakers find the order Negation>Subject$_{PRO}$ highly marked in main clauses with lexical verbs in V2 position (see also Westendorp & Lundquist 2021 for a comparison between Norwegian and Swedish).

As for NP subjects, there is a preference for the Negation>Subject order. In the study by Anderssen et al. (2018), the authors found that Norwegian speakers consistently gave a higher acceptability score for post-negation NP subjects than pre-negation NP subjects (mean 5.3 compared to 3.4 on a six-grade scale). Swedish participants, tested on similar material, found both orders equally unmarked (see Westendorp & Lundquist 2021). Yet, both orders are produced in spontaneous speech in Norwegian, and it is unclear if choice of word order reflects differences in meaning. The order preferences for subject viz. negation do not necessarily carry over to other adverbs, although the details are still not known (but see Svenonius 2002 for a more extensive discussion of subject placement in Norwegian contrasted with the other North Germanic languages). In general, longer/heavier adverbs like *aldri* ('never'), *alltid* ('always'), and *muligens* ('possibly') appear to be more likely to follow subjects, both pronominal and phrasal ones, while lighter, more particle-like adverbs like *vel*, *da* and *jo* behave more like negation. In one of the Norwegian NWD data collection sessions, other adverbs than the negation were included; the results are discussed in detail below.

[2.2] *Object placement*

As in the other Mainland North Germanic languages, Norwegian generally makes a strict division between pronominal and phrasal objects when it comes to placement with respect to adverbs (Holmberg 1986). When the syntactic contexts allows, light pronominal objects have to shift to the left of midfield adverbs (6a), while phrasal objects surface to the right of the adverbs (6b).

(6) a. Jeg så {ham}   ikke {*ham}.   (Obj$_{PRO}$–Neg)
    I   saw him   not   him
    'I did not see him.'
  b. Jeg så {*mannen} ikke {mannen}.   (Obj$_{NP}$–Neg)

    I   saw man.DEF   not   man.DEF
    'I did not see the man.'

In all North Germanic languages, object shift can only occur if the verb moves out of the VP, a pattern known as Holmberg's generalization (Holmberg 1986). Object shift can be blocked by a non-shifted subject or an indirect object; see (7) (and Section 5.3 below for discussion).

(7) a. I går   så   ikke Mai ham.   (Non-shifted subject)
    Yesterday saw not Mai him
    'Yesterday, Mai did not see him.'
  b. Jeg   ga ikke Mai den.   (Indirect object *in situ*)

    I   gave not Mai it
    'I did not give it to Mai.'

In the cases where object shift can occur, it is strongly preferred (if not obligatory) with weak pronominal forms in most North Germanic languages. However, there are exceptions. First, weak (i.e., prosodically deficient) pronouns can optionally remain *in situ* in several Swedish and at least some Norwegian dialects (see, e.g., Holmberg 1986; Sells 1998; Thráinsson 2001; Bentzen et al. 2013; Bentzen 2014a and references therein; Vikner 2017; Brinkerhoff & Tengesdal 2021, Larsson & Lundquist 2022a and references therein). Second, if an object pronoun is accented due to information structure (e.g., contrastive focus), object shift is restricted. Since the presence of stress or accentuation affects pronominal object placement, several attempts have been made to give a phonological account of object shift (Erteschik-Shir 2005; Hosono 2013; Erteschik-Shir et al. 2021; Brinkerhoff & Tengesdal 2021), but problems with phonological approaches have also been discussed (Svenonius 2005; Lyskawa et al. 2022). One crucial problem for phonological accounts is the third person neuter pronoun *det*: when *det* refers to a full clause or VP, it usually will not shift past negation, even though it is unstressed as in *jeg trur ikke det* ('I don't think so') (see especially Andréasson 2008; Bentzen & Anderssen 2019 and references therein).

While phrasal objects cannot shift across negation in the Mainland North Germanic languages (see, e.g., Holmberg & Platzack 1995), NP object shift is optional in the Insular North Germanic languages Icelandic, depending on definiteness, prosody and information structure (e.g., Thráinsson 2007, pp. 75–79; Larsson 2022), and Faroese (in more restricted contexts, cf. Thráinsson 2013; Lundquist 2020).

In addition to object shift across sentence adverbs, the experimental data in the present study also investigate the relative placement of an object in relation to a subject, so-called *long object shift* (LOS): An object that linearizes to the left of the subject has undergone long object shift (see, e.g., Holmberg 1986; Heinat 2007, and examples (11) and (24) below). Of the North Germanic languages, only Swedish is expected to allow LOS (in contexts with weak pronominal objects; see, e.g., Heinat 2007; Lundquist 2013). We do not expect any instance of LOS in Norwegian or the other North Germanic languages (see Larsson & Lundquist 2022a for more discussion).

[2.3] *Particle placement*

The North Germanic languages differ with respect to verb particle placement with respect to objects. Norwegian and Icelandic overall pattern together with English (see, e.g., Collins & Thráinsson 1996; Svenonius 1996), where weak pronouns and reflexives linearize before the particle, while NP objects and accented pronouns can appear on either side of the particle; see (8a–b). Swedish, on the other hand, only allows direct objects following the particle; cf. (8c). Danish only allows objects preceding the particle; cf. (8d), irrespective of object form (see, e.g., Toivonen 2003; Lundquist 2014; Larsson & Lundquist 2022b). Faroese is most similar to Danish; see Lundquist (2020) for data and discussion. In this article, we will refer to the variable placement of the particle with respect to the object as *particle shift*.

(8) a. Jeg tok {den/boken} opp {%den/boken}. (Norwegian)
I took it/book.DEF up it/book.DEF

b. Ég tók {hana/bókina} upp {*hana/bókina}. (Icelandic)
I took it/book.DEF up *it/book.DEF

c. Jag tog {*den/*boken} upp {den/boken}. (Swedish)
I took it/book.DEF up it/book.DEF

d. Jeg tog {den/bogen} op {*den/bogen}. (Danish)
I took it/book.DEF up it/book.DEF
'I picked it/the book up.'

It should be noted that there is dialectal variation in terms of linearization of pronouns in Norwegian, for instance in the Trønder dialects, which also allow post-particle weak pronominal objects (as indicated by the percentage sign in (8a)); see, e.g., Larsson & Lundquist 2014; Aa 2015; Tengesdal &

Lundquist 2021 for discussion).

We can also note that variable linearization of particles in relation to objects is known to be influenced by several different factors in the North Germanic languages. These include not only the object type, but also the particle and the semantics of the verb and particle in combination (see, e.g., Larsson 2022). Regarding Norwegian, corpus studies have revealed that directional particles more often linearize after the verb and object, while metaphorical (non-directional/non-transparent) particles more often linearize before the object (see Tengesdal et al. 2018, and discussion below). Objects that take the semantic role of ground seem to be preferably linearized after the particle, irrespective of the form (see, e.g., Svenonius 2003; Aa 2015). Moreover, information structure and prosody can most likely influence the order.

As we saw above, there is variation within and between the North Germanic languages in particle placement with regard to objects. However, the order of particles relative to subjects is stable: subjects precede verb particles. On the other hand, what we call *long particle shift* (LPS), that is, a particle that precedes the subject, has been observed in Norwegian child and teenage language (see Lundquist et al. 2019, p. 23, for discussion). For this reason, we also include long particle shift as a variable in our study.

The experiment included several conditions that test five types of verb particle constructions and the argument linearization of these in relation to pronominal and NP objects. More details are given in Section 5.4 below.

[3]   materials

Data collection took place during three different sessions, the first one in Oslo, followed by two different sessions in Tromsø, one at the University and one at a high school. For the two first sessions, the same elicitation material was used, but for the last one, two items were removed, and four items were added. The first two sessions included 92 experimental items, and the last one 94. The general elicitation method, and the design of the experiment, is described in detail in Lundquist et al. (2019). Below we will only describe the linguistically relevant properties of the experiments; readers who are interested in the visual and temporal information about stimuli presentation are referred to Sections 3–4 in Lundquist et al. (2019).

The argument placement experiment consists of three parts, which all make use of different word order manipulations and target different word order phenomena. The phenomena investigated each concern the linear order of two elements within the midfield (subject shift, object shift, long object shift) or the VP (particle shift). In each part of the experiment, participants first have to read a sentence with only one element in the midfield or VP. They then have to transform the sentence in some way (described in detail below), so that it would now contain two (or three) elements in the relevant domain.

In the first part of the experiment, the participants are first presented with a subject-initial sentence, with a main verb in second position. This sentence is referred to as the background sentence in Lundquist et al. (2019). The subject is either a light pronoun (*han* 'he' or *hun* 'she') or an NP (in most cases a non-modified definite noun). The verb is followed by a light pronoun (reflexive *seg* or first person *meg*), negation (*ikke* 'not') or a verb particle. In addition, each sentence contains some typical VP-material, for example a selected PP, and a temporal adverb, usually in sentence-final position; see (9) for an example. The participant is asked to read the background sentence aloud, and when this is done, a cue for a new sentence appears on the screen. The cue is the temporal adverb from the background sentence, which now appears as the start of a new sentence. When presented with this cue, the participant produces a target sentence, which should contain the same lexical material as the background sentence, but now with the subject in a postverbal position, either preceding or following the negation/object/particle. An example with negation is shown in (9) below: (9a) is the background sentence, and (9b) is the target, with the cue boldfaced and the two attested subject placements

indicated within brackets.

(9) a. Studenten   dro   ikke hjem   til   foreldrene   (Background
       student.DEF went   not   home   to   parent.PL.DEF
       i fjor.
       last year
       'The student did not go home to the parents last year.'
    b. **I fjor**   dro   {studenten}   ikke   {studenten}   (Target)
    .
       last year went   student.DEF   not   student.DEF
       hjem   til   foreldrene.
       home   to   parent.PL.DEF
       'Last year, the student did not go home to their parents.'

In (9), the word order choice that the participant makes in the target sentence corresponds to one of the core variables in the study, namely *subject shift*. In items where the verb is followed by a light object (e.g., *læreren hjalp meg med leksene i går*, 'the teacher helped me with the homework yesterday'), we test another variable, namely *long object shift*. Here, we investigate whether the subject surfaces before or after the object in the target sentence. In items with postverbal particles (e.g., *løperen ga opp under siste runde i går*, 'the runner gave up during the final lap yesterday'), the variable *long particle shift* is targeted.

    In one of the data collection sessions (Tromsø high school), we in addition included four items that targeted subject shift with respect to other adverbs than negation, namely *alltid* 'always' and *ofte* 'often'. An example is given in (10).

(10) a. Læreren   gikk   ofte   på   kino   i fjor.   (Background)
        teacher.DEF   went   often   on   cinema last year
        'The teacher often visited the cinema last year.'
     b. I fjor   gikk   {læreren}   ofte   {læreren}   (Target)
     .
        last year   went   teacher.DEF   often   teacher.DEF
        på   Kino.
        on   cinema
        'Last year, the teacher often visited the cinema.'

The second part of the experiment also targets the three variables subject shift, long object shift and long particle shift, but the focus in this part is on object shift, i.e., the linear ordering of an object and an adverb (here, negation). The objects tested were either a first person singular pronoun (*meg*) or a simple reflexive (*seg*). In this part, the background sentence has a periphrastic verb form, usually the future tense. The background sentence is subject-initial, just like in the first part. The auxiliary is sometimes followed by negation, in order to test object shift, as in (11). The main verb is followed by either a pronominal object or a verb particle. The cue for the target sentence is a temporal adverb and a simple past tense form of the main verb used in the background; see (11) for an example of the background and the cue.

(11) a. Advokaten   kommer   ikke   til   å   barbere *seg*   (Background)
        Lawyer.DEF   comes   not   INF   shave   REFL
        med   barberhøvel.
        with   razor
        'The lawyer will not shave (himself) with a razor.'
     b. **I går**   **barberte …**   (Cue)

yesterday   shaved

'Yesterday, … shaved …'

In the target sentence, there are now three elements that have to be linearized with respect to each other: the subject (*advokaten*), the object (*seg*) and the negation (*ikke*); this gives rise to six logically possible word orders. These word orders can all be attested in Swedish (see Larsson & Lundquist 2022a). In Norwegian, an object cannot be placed before a subject in the midfield (see further below); this restricts the possible orders to the following three:

(12) a. I går   barberte   ikke   advokaten   seg.   (no SS[3])

     yesterday   shaved   not   lawyer.DEF   REFL

 b   I går   barberte   advokaten   seg   ikke.   (SS and OS)
 .

     yesterday   shaved   lawyer.DEF   REFL   not

 c. I går   barberte   advokaten   ikke   seg.   (SS, no OS)

     yesterday   shaved   lawyer.DEF   not   REFL

     'Yesterday, the lawyer did not shave (himself).'

As was discussed in Section 2.2, light pronominal objects almost obligatorily shift past sentence adverbs in Norwegian, if the syntactic context allows it; (12c) is therefore not expected to be very frequent. In the present study, object shift is tested with either reflexive or first person object pronouns. In the experimental items, reflexive objects always co-occur with an NP subject, and first person objects always co-occur with a pronominal subject. When the subject is pronominal, we expect obligatory subject shift, and thus only the order in (12b).

The third part of the experiment targets object shift and particle shift. In this part, the background sentence in the passive voice, and the target is the corresponding active sentence. Below we give examples of items that target object shift (13) and particle placement (14).

(13) a. De   ble   ikke   arrestert   av   politiet   i går.   (Background)

     they   were   not   arrested   by   police.DEF   yesterday

     'They were not arrested by the police yesterday.'

 b   Politiet   arresterte   {dem}   ikke   {dem}   i går.   (Target)
 .

     police.DEF   arrested   them   not   them   yesterday

     'The police did not arrest them yesterday.'

(14) a. Studenten   ble   kastet   ut   av   vaktene   (Background)

     student.DEF   was   thrown   out   by   guard.PL.DEF

     i går.

     yesterday

     'The student was thrown out by the guards yesterday.'

 b   Vaktene   kastet   {studenten}   ut   {studenten}   (Target)
 .

     guard.PL.DEF   threw   student.DEF   out   student.DEF

     i går.

     yesterday

     'The guards threw the student out yesterday.'

In these items, the object is either a non-modified noun phrase or a third person pronoun. In items

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[3] We use the abbreiviations SS for Subject Shift and OS for Object Shift in the examples.

targeting particle shift, several syntactically relevant parameters were manipulated. A subset of the items contained semantically transparent directional particles, like *ut* ('out') combined with the verb *kaste* ('throw') in (14). In these cases the particle was either followed by a directional prepositional phrase, or just by a temporal adverb. Since we manipulated the object as well, that is, it was either a pronoun or a noun, we ended up with sets of four sentences, as in (15). In total four sets of the type illustrated in (15) were included.

(15) a. Vaktene   kastet {ham} ut {ham}   i går.   (PRO, no PP)
          guard.PL.DEF   threw   him   out him   yesterday
      b. Vaktene   kastet {studenten} ut {studenten}   (NP, no PP)
          guard.PL.DEF   threw student.DEF   out student.DEF
          i går.
          yesterday
          'The guards threw the student out yesterday.'
      c. Vaktene   kastet {ham} ut {ham} av puben.   (PRO, PP)
          guard.PL.DEF   threw him   out him   of pub.DEF
      d. Vaktene   kastet {studenten } ut   {studenten}   (NP, PP)
          guard.PL.DEF   threw student.DEF   out   student.DEF
          av   puben.
          of   Pub.DEF
          'The guards threw him/the student out of the pub.'

Another subset of the particle items had non-directional particles. Again, the objects were either pronominal or phrasal in these cases, and we included in total three different verb-particle combinations here: *skjelle ut* 'scold' (lit. 'bark out'), *kjøpe opp* acquire (lit. 'buy up'), and *sjekke opp* 'hit on' (lit. 'check up'). An example of possible target orders is given in (16):

(16) Rektoren   skjelte {henne/studenten} ut   {henne/studenten}
      principal.DEF   yelled her/student.DEF   out   her/student.DEF
      i går.
      yesterday
      'The principal scolded her/the student yesterday.'

In addition, one particle that is classified as ground-selecting was included, i.e., an item where the direct object is not interpreted as the figure (the element that moves or is located in relation to a ground element, as in (15)). This is the particle verb phrase *rydde av bordet* 'clear the table' (lit. 'clean off the table'). Finally, one item contains the particle verb *bygge om* 'rebuild' (lit. 'build about/around'), which is classified as having a prepositional particle.

A summary of the experimental items, with number of items per part and condition, is given in Table 1. For conditions where the number of items changed throughout the field work, we give the number of items in both settings; an asterisk points to the number of items in the session at the Tromsø high school.

Part	Phenomenon	Subcondition 1	Subcondition 2
1. Subject–Verb inversion (*n*=36)	Subject shift (*n*=10, 14)	NP subj. (*n*=5, 9*)	Neg. (*n*=5)
			Adv. (*n*=4*)
		PRO subj. (*n*=5)	
	Long object shift (*n*=15)	NP subj. (*n*=10)	REFL obj. (*n*=5)
			1st pers obj. (*n*=5)
		PRO subj. (*n*=5)	REFL obj. (*n*=5)

	Subject–Particle (n=11, 7*)	NP subj. (n=8, 4*)	
		PRO subj. (n=3)	
2. Subject–Verb inversion, complex to simple tense (n=20, 22*)	Subject shift, (long) object shift (n=10, 12)	NP subj. (n=5)	REFL obj. (n=5)
		PRO subj. (n=5)	1st pers obj. (n=5)
		NP subj. (n=2*)	No obj. (n=2*)
	Subject–Particle (n=10)	NP subj. (n=5)	
		PRO subj. (n=5)	
3. Passive to active (n=36)	Object shift (n=11, 12*)	NP obj. (n=4)	
		PRO obj. (n=7, 8*)	
	Particle shift (n=25, 24*)	NP obj. (n=13)	See Section 5.4
		PRO obj. (n=12, 11*)	

table 1: Overview of materials in the experiment. Numbers marked with an asterisk indicate number of items for the participants in the final experiment version, at the Tromsø high school.

[4] participants and experimental setup

As mentioned above, data collection took place during three different sessions in 2018.[4] Data was collected from 20 students at a high school in the Oslo area, who all identified as speakers of Urban East Norwegian (Kristoffersen 2000) or simply 'Oslo dialect', and 23 students from a high school in the Tromsø area, who identified as speakers of Troms/the Northern Norwegian dialect. Finally, we collected data from 20 participants at the University of Tromsø, and these participants were from various parts of the country, from the northernmost parts of Finnmark to Kristiansand in the south. The geographical spread of the participants are shown in the map in Figure 1 below: the home town/self-defined dialect of the participants are marked with red dots. Tromsø and Oslo are marked with blue dots, indicating both fieldwork locations and dialectal background. Although we cover several dialects, we still lack data from most of the Norwegian dialects. Dialect speakers from Trøndelag and Western Norway are currently few in the database; we return to this in the discussion in Section 6. The participants from the high schools were all between 16 and 18 years old, but the age

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[4]   In November 2022, 19 additional recordings were made of students at a high school in Fosen (Ørland municipality). The results from Fosen are not presented in the current article.

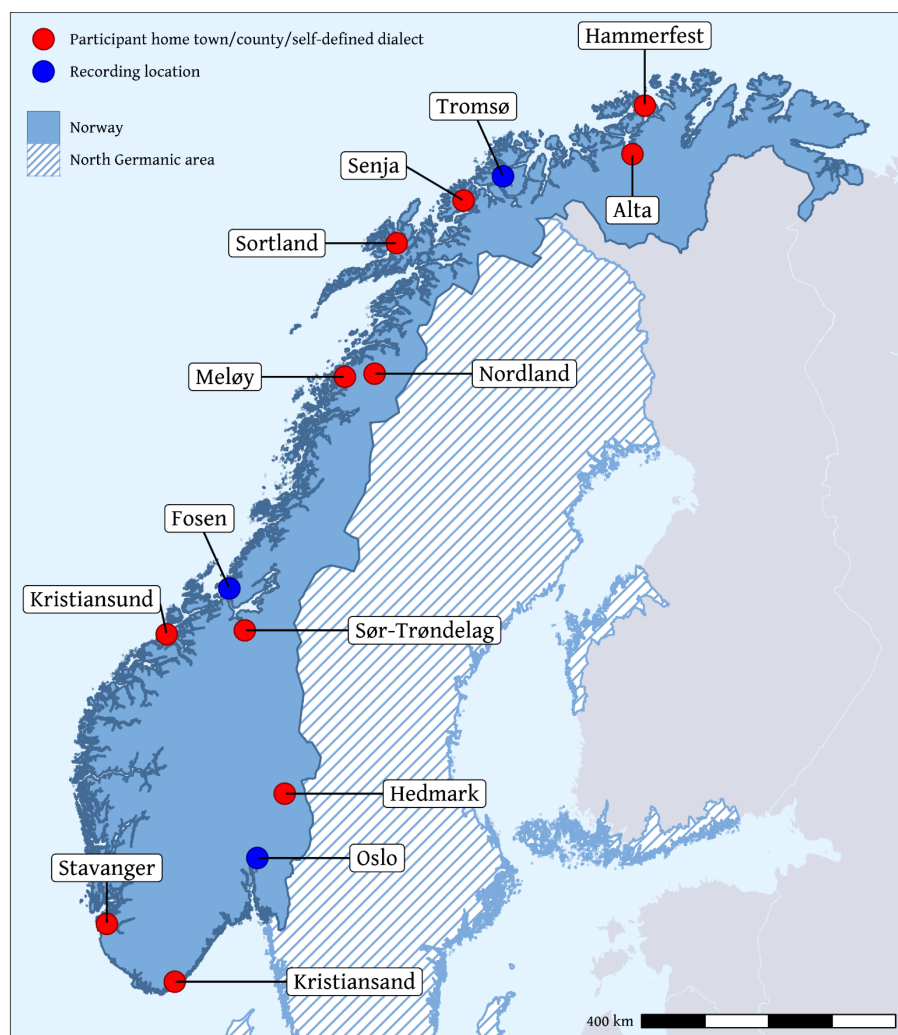range for the participants recorded at UiT was larger (approximately 20–50 years).

figure 1: Overview of the NWD fieldwork locations (blue dots) and the birth place, home town or county of the participants (red dots) in Norway.[5]

The experiment was run on a laptop with the open-source software OpenSesame (Mathôt, et al. 2012). The recordings were made with different types of sound equipment, but in most cases, handheld digital audio recorders (Zoom H2n/H4/H4n Pro Handy Recorder). A limited number of recordings were made with an external lapel microphone (Audio-Technica ATR3350/AT8532), but most recordings were made using the recorder microphone(s). The recordings were made in WAV-format at 44,1 kHz audio sampling rate, with a bit depth of 16. In some cases, we recorded directly onto our computers. The sound files were subsequently segmented and annotated in ELAN.

[5] results

This section is divided into four subsections, focusing in turn on subject placement with respect to negation and adverbs (5.1), subject placement with respect to objects and particles (5.2), object placement with respect to negation (5.3) and object placement with respect to particles (5.4). Each subsection ends with a short instruction of how to access the results and sound files in the NWD online interface.

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[5]   The map was created by customizing version 1.0.0 of a map script from GitHub, archived by Zenodo (see Tengesdal 2022, and GADM 2022). The following software and packages were central: *R* (R Core Team 2020), *RStudio* (RStudio Team 2020), *ggplot2* (Wickham 2016), *ggspatial* (Dunnington 2022), *ggrepel* (Slowikowski 2021), *ggnewscale* (Campitelli 2022), *ggpattern* (FC et al. 2022) and *sf* (Pebesma 2018).

Placement of subject with respect to negation and adverbs

The variable subject shift, i.e., the placement of a midfield subject with respect to an adverb, is tested in several conditions in part 1 and 2 of the experiment. In the first part, we test the linear order of the elements subject and negation/adverb, and in the second part, we test the order of the elements subject, negation and object, where the object is either a reflexive or a first person pronoun. In total, we have recorded and annotated 1 354 elicited sentences that contain both a subject and an adverb in the midfield. As mentioned above, the relevant midfield adverb in the test is the negation *ikke*. Other adverbs were only tested in the Tromsø high school data collection. We will first discuss the ordering of subject and negation, and thereafter discuss the other adverbs.

From part 1, we have in total 735 observations. 303 of these have pronominal subjects: an example of background and target pair is given in (17), with the two relevant elements in curly brackets:

(17) a. Han   fant   ikke   nøklene   til   kontoret   i går.   (Background)
          he   found   not   key.PL.DEF to   office.DEF   yesterday
          'He did not find the keys to the office yesterday.'
      b. I går   fant   {han ikke}   nøklene   (Target)

          yesterday   found   he   not   key.PL.DEF
          til   kontoret.
          to   office.DEF
          'Yesterday, he did not find the keys to the office.'

In the material, all the 303 elicited sentences have the order Subject>Negation; there is not a single instance of a pronominal subject following negation.

The placement of pronominal subjects with respect to negation is also tested in part 2 of the experiment, where the subject and negation in addition have to be linearized with respect to a light pronominal direct object. The placement of the object will be discussed in Section 5.2 and 5.3; in this section we focus on the placement of the subject with respect to negation. In total, 309 examples of this kind were elicited, and not a single one contains a pronominal subject preceding negation. There were 18 production errors in total; they involved dropping of negation or object.

As for the items with NP subjects, we will treat the ones with negations separately from the sentences with other adverbs. From part 1 of the experiment, we have 306 elicited sentences that directly test Subject$_{NP}$–Negation order. Of these, 276 (90%) have the order Negation>Subject$_{NP}$, 28 (9%) have the opposite order and two sentences contained a production error or irrelevant response (NP was substituted with a pronoun, or negation left out). The dominant Negation>Subject order is exemplified in (18b), and the corresponding background sentence is provided in (18a).

(18) a. Læreren   tok   ikke   bussen   til   jobb i går.   (Background)
          teacher.DEF   took   not   bus.DEF   to   job   yesterday
          'The teacher did not take the bus to work yesterday.'
      b. I går   tok   ikke   læreren   bussen   til   jobb.   (Target)

          yesterday   took   not   teacher.DEF   bus.DEF   to   job
          'Yesterday, the teacher did not take the bus to work.'

We find no clear pattern with respect to interspeaker variation for the Subject>Negation order. 17 out of the 63 participants produce the order Subject>Negation at least once. There seems to be a slightly higher likelihood of finding this word order in Oslo (8/20 participants, 40%) than in Northern Norway (5/23, 22%, of the high school students, 4/20, 20%, of the UiT participants).

The placement of NP subjects was also tested in part 2, in two different version: one with sentences

that contained both negation and a light object (20), and one that only contained negation. The second version was only tested at The Tromsø high school. This version of the experiment contained two items that tested subject placement with respect to negation, as exemplified (19):

(19) a. Studenten   kommer   ikke   til   å   dra   hjem   (Background)
          student.DEF comes   not   INF   go   home
          til   foreldrene.
          to   parent.PL.DEF
          'The student will not go home to the parents.'
      b. I fjor   dro   {ikke   studenten}   hjem   (Target)
          last year   went   not   student.DEF   home
          til   foreldrene.
          to   parent.PL.DEF
          'Last year, the student did not go home to their parents.'

We elicited in total 42 sentences of this kind, and 15 of them (36%) have the order Subject>Negation (items no. 1251 and 1252). Note the two main alternatives in the target sentences were identical to the alternatives in two items in part 1 of the experiment, although the background sentences were different. However, the results from the two parts differ greatly: for the same two target sentences in part 1 (items no. 1122 and 1124), the same participants did not produce a single instance of this word order; see Section 6 for discussion of this finding.

All participants were also tested for subject shift in the context of a light reflexive object. The background sentence and a plausible target is given in (20).

(20) a. Advokaten   kommer   ikke   til   å   barbere seg   (Background)
          lawyer.DEF   comes   not   INF   shave   REFL
          med   barberhøvel.
          with   razor
          'The lawyer will not shave (himself) with a razor.'
      b   I går   barberte ikke   advokaten   seg   (Target)
      .
          yesterday   shaved   not   lawyer.DEF   REFL
          med   barberhøvel.
          with   razor
          'Yesterday, the lawyer did not shave (himself) with a razor.'

We have elicited 310 sentences in this condition, out of which 31 sentences contain some error, usually replacement of the NP subject by a pronoun or dropping of negation. Of the 279 produced sentences without task errors, we find 170 (61%) instances of the Negation>Subject order, and 109 (39%) of the Subject>Negation order. This word order distribution is clearly different from the distribution we found in part 1, where only 10% of the elicited sentences had Subject>Negation order, but similar to the two sentences discussed illustrated in (19). Again, we will discuss this discrepancy in Section 6.

As in part 1 of the experiment, there seems to be some differences in the results from part 2 in the three recording locations. In the Tromsø high school, 29% of the sentences had the word order Subject>Negation, while the corresponding number in Oslo is 41%. In the mixed UiT group, we found 48% Subject>Negation order. A closer investigation of possible dialect patterns within the mixed group is outside the scope of this study.

There are also some apparent item effects in part 2, seen most notably in the difference between item 1217 (21a), for which the subject (and the reflexive) precedes negation in 55% of the elicited sentences, and 1220 (21b), which only has 27% Subject>Negation order (note the intervening reflexive

object in both cases).

(21) a. I går   følte   studenten   seg   ikke   trøtt   (1217)
        yesterday   felt   student.DEF   REFL   not   tired
        etter   skolen.
        after   scool.DEF
        'Yesterday, the student did not feel tired after school.'
    b. I går   vasket   løperen   seg   ikke   (1220)
     .
        yesterday   washed   runner.DEF   REFL   not
        etter   løpet.
        after   race.DEF
        'Yesterday, the runner did not wash (himself) after the race.'

It is not clear what triggers this difference: either it is the predicate – the highly lexicalized verb–reflexive combination *føle seg* ('feel') compared to the transparent *vaske seg* ('wash oneself'), or it is the status of the element following the predicate– a selected predicative adjective compared to a non-selected temporal adverbial. Another possible explanation is the stress pattern of the subject NP: *studenten* has stress on the second syllable, while *løperen* has stress on the first. More research, and more targeted data collection, is required for a better understanding of this variation.

   To summarize the results regarding the placement of NP subjects with respect to negation, we find considerable variation in our data. Overall, the order Negation>Subject$_{NP}$ is by far the most common: considering all subconditions discussed above together, we find 75% Negation>Subject order. Elicitation method, i.e., the form of the background sentence, appears to be the factor that most influence word order choice. We also see effects of location: there is slightly more Subject>Negation order in Oslo compared to Tromsø. There is also an item effect. Altogether, a majority of the participants produce at least one shifted NP subject throughout the course of the experiment, but 15 out of 63 participants consistently place all NP subjects after negation. Of course, if the experiment had included more items, these participants might have produced shifted orders as well. We show the variation between participants in the histogram in Figure 2. As we can see, there are not two groups of speakers with different grammars, for instance, shifters vs. non-shifters. No one produces only shifted NP-subjects (max number of items = 11), and most participants shift only in a very small number of items (median = 2, mean = 2.5).

figure 2: Histogram of interindividual variation in NP-subject shift.
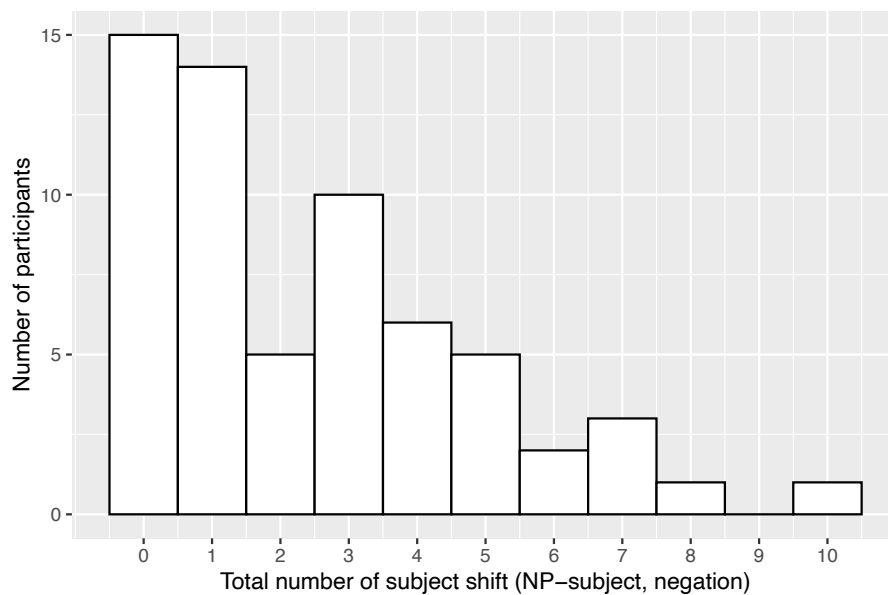
In the Tromsø high school data collection, the experiment included four items targeting NP subject placement with respect to the adverbs *alltid* 'always' and *ofte* 'often', exemplified in (22) below.

(22) a. Studenten   kom   alltid   for sent   til   (Background)
         student.DEF   came   always   too late   to
         forelesninga   i fjor.
         lecture.DEF   last year
         'The student always came too late to the lecture last year.'
     b. I fjor   kom   {alltid   studenten}   for   sent   (Target)
         last year   came   always   student.DEF   too   late
         til   forelesinga.
         to   lecture.DEF
         'Last year, the student always came too late to the lecture.'

In total, we have 84 elicited sentences in this condition, of which two contain a task error. Of the remaining produced sentences, only 11 (13%) have the adverb placed before the subject. That is, for adverbs like *alltid* ('always') and *ofte* ('often'), the most common placement with respect to the subject is the opposite of the order with negation.

In sum, we find (i) completely categorical shifting of pronominal subjects around negation, (ii) variable shifting of NP subjects across negation, with a rather strong preference for non-shifting but with a clear effect of elicitation method, and (iii) a strong preference for shifting NP-subjects around the midfield adverbs *alltid* and *ofte*. The exact numbers of the produced orders are given in Table 2 below.

Word order pair	Subject first	Adverb first	Other
PRO – Negation	594	0	18
Part 1: NP – Negation	28	276	0
Part 2: NP – Negation	124	197	33
NP – Adverb	71	11	2
Total	**817**	**484**	**53**

table 2: Overview of subject placement.

The interested reader can further investigate and listen to the sets of sentences that target subject placement with respect to negation and other adverbs in the NWD online interface, by selecting 'Subject – Adverb' in the Pairs dropdown menu, and furthermore either 'PRO' or 'NP' in the TypeElement1 menu, and 'Neg' or 'Adv' in the TypeElement2 menu (alternatively, select 'SS' in the Exact Category menu, and use the other menus for further subsetting the dataset).

[5.2] *The placement of subjects with respect to objects and particles (long object shift and long particle shift)*

In the previous section, we saw that a post-verbal subject does not necessarily directly follow the verb, as adverbs may intervene between the verb and the subject. Here, we focus on two other elements that in principle could intervene between the finite verb and an inverted subject: light object pronouns and verb particles.

The placement of a light pronominal object with respect to a midfield subject is tested in part 1 and part 2 of the experiment. In the first part, reflexive objects (*seg*) are tested against both pronominal and NP subjects (23), and first person objects are tested against NP subjects (24).

(23) a. Han/Læreren   skyndte seg   hjem   fra   jobb i går. (Background)

            he/teacher.DEF   hurried   REFL   home   from   job   yesterday
            'He/The teacher hurried home from work yesterday.'

     b. I går   skyndte {han/læreren   seg} hjem   (Target)

            yesterday   hurried   he/teacher.DEF   REFL   home
            fra   jobb.
            from   job
            'Yesterday, he/the teacher hurried home from work.'

(24) a. Læreren   ga   meg   en   ny   bok i går.   (Background)
            teacher.DEF   gave me   a   new   book yesterday
            'The teacher gave me a new book yesterday.'

     b. I går   ga   {læreren   meg} en   ny   bok.   (Target)

            yesterday   gave teacher.DEF   me   a   new   book
            'Yesterday, the teacher gave me a new book.'

We have elicited in total 300 sentences with a reflexive object and an NP subject, 305 sentences with a reflexive object and a pronominal subject, and 309 sentences with a first person object pronoun. Out of these, there were 7 production errors (substitution of NP with pronoun, or dropping of object pronoun). We find only one case of an object preceding a subject (reflexive object, NP subject), but this contains a long hesitation by the speaker. We are quite sure that this can be classified as a production error.

In the second part of the experiment, the linear order of subject and object is also tested, but now in the presence of a negation. Reflexive objects are tested against NP subjects (see, e.g., examples (20–21) above), and first person objects are tested against pronominal subjects. For the reflexive objects, we have 310 elicited examples, of which 31 contain some production error (pronoun instead of NP, dropping of negation). We do not find a single attestation of a reflexive pronoun preceding a subject. For the first person objects, we find one example of a shifted object out of 309 elicited sentences, and this sentence also contains considerable hesitation and self-correction.

In total, out of 1 525 elicited sentences, there are only two instances of objects shifted over the subject, and these contain hesitations. We feel quite confident to conclude that shifting of objects over

subjects is not a part of the Norwegian grammar. This is in line with previous descriptions of Norwegian (see e.g. Faarlund 2019: 202).

The placement of subjects with respect to particles is tested in part 1 and 2, in a similar fashion as with subjects and adverbs. We give examples from the two parts in (25–26) below. The subjects were either pronominal or phrasal. In two cases, the NP subjects were indefinite, and they were combined with unaccusative verbs (*dette ned* 'fall down', *brenne ned* 'burn down') in order to increase the chances of post-particle subjects, as subjects of unaccusative verbs are more likely to show object-like syntactic properties (see Perlmutter 1978).

(25) a. Tre   tavler   datt   ned   i   den   store   (Background)
         three   board.PL fell   down   in   the   great
         salen   i går.
         hall.DEF   yesterday
         'Three boards fell down in the great hall yesterday.'
      b. I går   datt   {tre   tavler   ned}   i   (Target)
         yesterday   fell   three   boards   down   in
         den   store   salen.
         the   great   hall.DEF
         'Yesterday, three boards fell down in the great hall.'

(26) a. Løperen   kommer   til å gi   opp   under   (Background)
         Runner.DEF comes   INF   give   up   during
         siste   runde.
         final   lap
         'The runner will give up during the final lap.'
      b. I går   ga   {løperen   opp} under   (Target)
         yesterday   gave   runner.DEF   up   during
         siste   runde.
         final   lap
         'Yesterday, the runner gave up during the final lap.'

We have elicited in total 1 205 sentences that test for the order of subjects with respect to particles, 716 with NP subjects and 489 and with pronominal subjects. Of these, we find two examples with a particle preceding the subject. Both are produced by the same speaker, and involve the two examples given in (25–26), both with NP subjects. There are in total 43 production errors, mainly in items with NP subjects. Of certain interest are five cases of expletive insertion and post-particle true subjects/pivots as in (27).

(27) I går   datt   det   ned   tre   tavler   i   den
      yesterday   fell   EXPL down   three board.PL in   the
      store   salen.
      great   hall.DEF
      'Yesterday, three boards fell down in the great hall.'

Still, the number of expletive insertions is relatively small, and participants seem to have no problems separating the verb from the particle, even when the subject is a complex NP. Despite the two exceptions, we conclude that long particle shift is not a part of the grammars of the participants tested in this study. We summarize the data for long object shift and long particle shift in Table 3.

Word order pair	Subject first	Subject second	Other

Subject_{PRO} – Object	593	1	20
Subject_{NP} – Object	881	1	37
Subject_{PRO} – Particle	480	0	9
Subject_{NP} – Particle	680	2	34
Total	**2 634**	**4**	**100**

table 3: Overview of subject placement with resoect to objects and particles.

The sound clips can be accessed in the NWD interface by choosing 'Subject – Object' or 'Subject – Particle' in the pairs menu, optionally followed by a specification of the type of subject in the TypeElement1 menu.

[5.3]*Object shift*

Regular object shift across a sentence adverb is tested in part 2 and part 3 of the experiment. Four types of direct objects are tested: simple reflexive pronouns (*seg*), first person singular pronouns (*meg*), third person singular or plural pronouns (*ham*, *henne* and *de*), and definite NPs. In this section, we present the results for the different types in turn, starting with reflexive objects.

Reflexive objects are tested in combination with negation and NP subjects in part 2, as already discussed in Section 5.1 (subject shift) and Section 5.2 (long objects shift) above. We repeat an example of background and target sentences in this condition in (28):

(28) a. Studenten kommer til å føle seg trøtt (Background)
          student.DEF comes INF feel REFL tired
          etter skolen.
          after scool.DEF
          'The student will feel tired after school.'
      b. I går følte ikke studenten seg trøtt (Target)
          yesterday felt not student.DEF REFL tired
          etter skolen.
          after school.DEF
          'Yesterday, the student did not feel tired after school.'

In (28b), the object follows both the negation and the subject. This cannot be counted as absence of object shift, since object shift is dependent on subject shift, which has not applied here; in other words, (28b) is not a context where object shift could apply (see also Larsson & Lundquist 2022a). We find three different word order patterns in this condition in the Norwegian data: 170 instances of the order Negation>Subject>Reflexive, 106 instances of Subject>Reflexive>Negation, and three instances of the order Subject>Negation>Reflexive. This last word order has subject shift, but not object shift. Two of the three examples are produced by the same speaker, and all three examples seem prosodically well-formed. In short, we find 106 instances of object shift, three instances of absence of objects shift, and 170 produced sentences where the structural configuration does not allow object shift (since the non-shifted subject blocks object shift).

First person pronominal objects were tested in part 2 of the experiment, but together with pronominal subjects. As was reported in Section 5.1, pronominal subjects shift around negation without exception, and therefore never block object shift. In the results, there are 267 (92.4%) elicited sentences with the shifted order Subject>Object>Negation, and 22 (7.6%) sentences with the unshifted order Subject>Negation>Object. In addition, the results contained 19 production errors, and one instance of the order Object>Subject>Negation; see 5.4.

Third person object pronouns were tested in the third part of the experiment, where the elicitation

method consisted of a transformation from a passive sentence to an active sentence, as illustrated in (29).

(29) a. Han   ble   ikke forsvart   av   kollegene   (Background)
        he   was   not   defended   by   colleague.PL.DEF
        under   møtet.
        during   meeting.DEF
        'He was not defended by the colleagues during the meeting.'
     b. Kollegene   forsvarte {ham   ikke}   (Target)
        colleague.PL.DEF   defended   him   not
        under   møtet.
        during   meeting.DEF
        'The colleagues did not defend him during the meeting.'

We have elicited 456 sentences in this condition, out of which seven involve a production error. 428 (95.3%) sentences have the expected shifted word order Object>Negation, and 21 (4.7%) sentences have an unshifted word order.
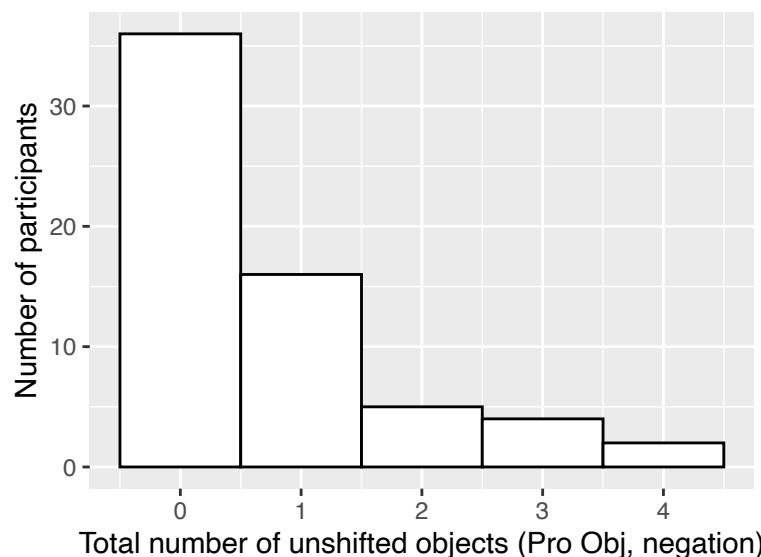
figure 3: Histogram of total number of unshifted objects in contexts with expected shifted

In sum, the number of unshifted pronominal objects is quite small. In total, there are 802 shifted pronominal objects compared to 46 unshifted (5.4%). Distinguishing different pronouns, there are three (2.8%) unshifted and 106 shifted reflexives in our data set, 22 (7.4%) unshifted and 267 shifted first person objects, and 21 (4.7%) unshifted compared to 428 shifted third person pronominal objects. In other words, first person pronouns are more likely to stay in an unshifted position, than the other types. There seems to be some effect of recording location: unshifted objects make up less than 2% in the Oslo material (4 out of 270 examples), while they make up 10% in the Tromsø high school material (29 out of 298 examples). As with the subject shift results, we do not find a strong effect of participant, i.e., there is not a small set of participants that are responsible for all the unshifted objects; rather, many participants occasionally deviate from the typical object shift pattern, as shown in the histogram in Figure 3. No one produces more than 4 unshifted objects out of up to 17 possible contexts for (non-)object shift. Still, the majority of the participants (*n*=36) do not produce a single unshifted pronominal object. The interested reader is encouraged to listen to the sound files in NWD, where it is possible to investigate the stress patterns of shifted and unshifted pronouns. objects.

    NP object shift was tested in part 3 of the experiment, in the same type of context as pronominal

object shift. An example is given in (30).

(30) a. Ranerne   ble   ikke arrestert   av   politiet   (Background)
     robber.PL.DEF   were not   arrested   by   police.DEF
     i går.
     yesterday
     'The robbers were not arrested by the police yesterday.'
   b. Politiet   arresterte {ikke   ranerne}   i går.   (Target)
     police.DEF   arrested   not   robber.PL.DEF yesterday
     'The police did not arrest the robbers yesterday.'

The database contains 247 elicited target sentences of this type, of which seven have a production error (usually substitution of NP with a pronoun). 236 sentences have the expected word order Negation>Object, and four have the opposite order (i.e., they are instances of NP object shift). Two of these involve considerable hesitation, and should probably be considered production errors. The other two examples are realized with a natural intonation.

The object shift data are summarized in Table 4 below.

Word order pair	Object first	Object second	Other
REFL object –	106	3	31
1st person – Negation	268	22	19
3rd person –	428	21	7
NP object – Negation	4	236	7
Total	**807**	**282**	**65**

table 4: Overview of object placement w.r.t. negation.

The object shift sound recordings can be accessed in the NWD interface by selecting 'Negation – Object' in the pairs menu, and optionally selecting type of object ('1st_PRO', '3rd_PRO', 'Refl_PRO' or 'NP') in the TypeElement2 menu.

[5.4] *Particle placement*

In the experimental design, we separated five types of verb–particle constructions, and these were tested both with pronominal and NP objects. We give examples of the five types in (31) below:

(31) a. Stuepiken   tok   ned   maleriet   (Directional + PP)
     chambermaid.DEF   took down painting.DEF
     fra   veggen.
     from   wall.DEF
     'The chambermaid took down the painting from the wall.'
   b. Vaktene   kastet ut   studenten   i går.   (Directional)
     guard.PL.DEF   threw   out student.DEF   yesterday
     'The guards threw the student out yesterday.'
   c. Rektoren   skjelte   ut   eleven   i går.   (Non-dir.)
     principal.DEF   yelled   out   pupil.DEF yesterday
     'The principal scolded the pupil yesterday.'
   d. De   nye   eierne   bygde   om   huset   (Prepositional)
     the   new owner.PL.DEF   built   PART house.DEF
     etter et   par   År.

after a couple year.PL

'The new owners rebuilt the house after a couple of years.'

e. Vertene ryddet av bordet etter middagen.   (Ground)
   host.PL.DEF clean   up table.DEF after dinner.DEF

'The hosts cleaned up the table after the dinner.'

The last two categories were only tested with one item each, and since the results from these categories are indistinguishable from the metaphorical/non-directional particles, we collapse these three categories into one, which we will refer to as non-directional particles below. In total, there are 1 525 elicited sentences that target the order of verb particles and objects (particle shift). 806 of these contain an NP object and 719 have a pronominal object. There are in total 66 unexpected responses in the data, that we treat as production errors. The errors usually occur in sentences with the inanimate pronoun *det*, which participants often misanalyse as an expletive subject (e.g., *Det ble bygget om ...* 'It was rebuilt...'). We find clear effects of both type of argument (pronoun vs. NP) and type of verb particle (directional + PP, directional, and non-directional). The general trends are shown in Figure 4, where we have excluded the production errors.
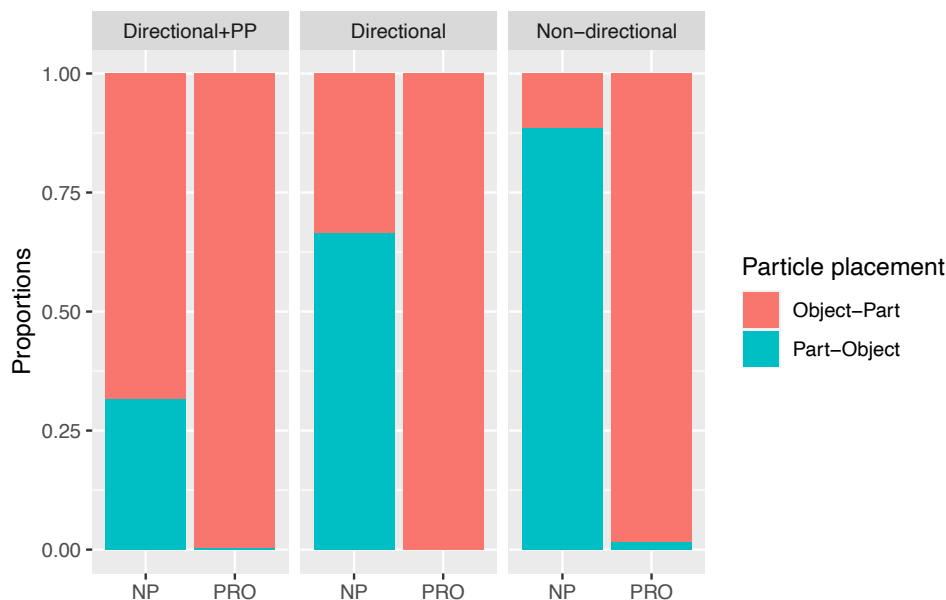
figure 4: Proportions of particle placement w.r.t. particle and object types.

The results show that directional particles are more likely to follow NP objects (50.8%) compared to non-directional particles (11.5%), and among the directional particles, the ones with following PPs are most likely to follow the object (68.3% compared to 33.6%). However, there is no difference between the three classes of particles when the object is a pronoun: pronouns generally precede particles. In total, only 4 cases of pronominal objects following a particle. Three of these come from the same item (*skjelle ut henne* 'scold her'). The raw numbers for the particle shift data are given in Table 5.

Word order pair	Object first	Object second	Other
Object_PRO – Directional+PP	250	1	3
Object_NP – Directional+PP	168	78	1
Object_PRO – Directional	235	0	4
Object_NP – Directional	84	166	2
Object_PRO – Non-directional	196	3	27
Object_NP – Non-directional	32	246	29

| | **Total** | **965** | **494** | **66** |

table 5: Overview of object placement w.r.t. particles.

We encourage the readers to do a closer investigation of possible effects of dialects and items. The particle shift data can be found in the NWD database by either choosing 'Object – Particle' in the pairs dropdown menu, and then select 'PRO' or 'NP' in the TypeElement1 menu, or alternatively by choosing one or several of the different particle types in the ExactCategory menu.

[5.5] *Summary*

The experimental results that are presented in this paper reveal both categorical word order restrictions and gradient variation. We have confirmed the expected strict precedence relation between subjects and objects, and subject and particles. Furthermore, we found no variation in the placement of pronominal subjects; all pronominal subjects preceded negation, objects, and particles. NP subjects, on the other, hand showed a highly variable placement pattern with respect to negation, but this variation was to some extent modulated by the elicitation method, as will be returned to in the discussion below. With regards to objects, the majority of pronominal objects shifted over negation (OS), while the number of shifted phrasal objects is so small that they may be considered production errors. Lastly, regarding particles, we found that non-directional particles more often shifted over phrasal objects compared to directional particles. For the directional particles, the presence of a PP further increased the likelihood of the order Object>Particle. For the pronominal objects, on the other hand, there was no effect of particle type. Here, the order Object>Particle was near-categorical. As expected, particles did not shift over pronominal or phrasal subjects (*long particle shift*), with the exception of two instances of a particle shifting over a phrasal subject, which most likely should be treated as production errors.

[6]   d i s c u s s i o n

The goal of this paper was to give an overview of the Norwegian data in NWD, and further place the results in a comparative frame with the other North Germanic languages. In this discussion, we briefly compare the results with those from the other North Germanic languages, as covered in the papers in the NALS special issue on Nordic Word Order Database. In addition, we discuss different factors that influence word order choice in syntactic contexts where variation is found.

As for the non-variable patterns, the results from the Norwegian data collection is similar to the patterns found in the other Mainland North Germanic languages. The following three categorical patterns are found in Swedish and Danish as well: (i) subject pronouns always precede negation and other adverbs, (ii) all subjects, independent of form, precede verb particles, and (iii) NP objects follow negation. The only potentially surprising finding here is (i): the strict order of subject pronouns with respect to adverbs. As mentioned in the background section, Østbø Munch (2013) found quite a high proportion Negation>Subject_{PRO} order in her corpus material. The reason we do not find this pattern in our data might be due to the dialect coverage in the data collection: incorporated negation is mainly found in Western Norwegian (e.g., Nordfjord, Volda). In other places, Negation>Subject_{PRO} is more restricted to contrastively focused subjects, and in our elicitation paradigm, all pronouns were non-contrastive. Furthermore, we did not elicit any sentences where the finite verb was an auxiliary or a copula verb, which also reduces chances for incorporation of negation.

The fourth categorical pattern is (iv) the placement of subjects with respect to objects (*long object shift*). Here, we find that the Norwegian-speaking participants consistently place subjects before objects, independent of form of the both subject and object. These results look identical to the results found in the Danish (Larsson & Tengesdal 2022), Faroese (Lundquist 2020) and Icelandic (Larsson 2022) data. Only in Swedish do we find variation with respect to long object shift (see Larsson & Lundquist

2022a).

The last (near-)categorical pattern concerns the order of (v) pronominal objects with respect to verb particles. Here again, Norwegian shows the same pattern as Danish, Faroese and Icelandic, with object pronouns preceding particles, and again, Swedish is the odd one out with a categorical Particle>Object order. The Norwegian data contain four exceptions to the standard Object$_{PRO}$>Particle order, and two of these are produced with some hesitation. It is not clear if these four attestations should be regarded as production errors, or if there is genuine variation in Norwegian. As pointed out in the background section, the Particle>Object$_{PRO}$ order is found in parts of Trøndelag, and also in dialects spoken in areas close to the Swedish border in Eastern Norway (see Tengesdal & Lundquist 2021 and references therein).[6]

We find variation in the word order in three of the investigated phenomena: NP subject shift, particle shift in contexts of NP objects, and (pronominal) object shift. Out of these, we find the least variation for object shift; close to 95% of the pronominal objects shift. Similarly to the other North Germanic languages, we find a near categorical (97.2%) shifting of the simple reflexive object *seg*). The highest proportion of unshifted objects (7.6%) was found with the first person object pronoun *meg*.The proportion of unshifted *meg* is still relatively small, but it is still higher than in the results from the Danish, Faroese and Icelandic data in NWD, where unshifted first person pronominal objects are virtually absent (0–1% in these three languages). In both Danish and Faroese, third person pronominal objects are more likely to remain in an unshifted position (around 10%), while unshifted third person objects are rare in the Norwegian data (4.7%, 21 unshifted objects, 428 shifted objects). In the Swedish data, third person pronouns are the least likely to shift (as much as 40% unshifted) compared to 20% unshifted first person objects, and 3% unshifted reflexives (see Larsson & Lundquist 2022a). In other words, Norwegian is the odd one out in having a higher proportion of unshifted first person compared to third person object pronouns. We do not know why this is, but it suggests that object shift is governed by slightly different factors in the five North Germanic languages (see also Bentzen et al. 2013 for differences in corpus frequencies with respect to object shift in the Mainland North Germanic languages). It should be mentioned that the material used for elicitation for the five different langues is near-identical, with only small changes to accommodate for lexical differences in subcategorization patterns. As far as we can tell, the differences in object shift patterns cannot be explained by differences in eliciatation material.

Despite some variation in object shift, pronominal objects adhere to form-based generalizations stated in the introduction of the article: If an argument (a subject or an object) is realized as a pronoun, and is in the same syntactic domain (VP or TP/midfield) as an adverb or particle, the argument will in the unmarked case precede the adverb or particle. In the results from the current study, the only exception to this is object shift, where we find a small number of weak pronominal objects that follow a negation. The pattern for NP arguments is less strict; subjects can precede or follow adverbs, and objects can precede or follow verb particles. The variation we find is not straightforwardly explained in terms of information structure, e.g., whether they are new or given in the discourse (see further below). For placement of NP objects with respect to particles, we find an effect of the type of particle. When the particle and the verb make up one semantic unit, e.g., *skjelle ut* ('scold') and *sjekke opp* ('make a move on'/'hit on'), an NP object rarely precedes the particle, in contrast to cases where the verb and the particle both make a transparent semantic contribution (e.g., *kaste ut*, 'throw out'). This pattern is not related to the givenness of the object, but seems rather to be an effect of a preference to have elements that forms a tight a potentially non-transparant semantic unit next to each other (here, the verb and the particle). Note, however, that object pronouns precede particles even when verbs and particles form a close semantic unit. This may suggest that the preference is rather to realize the verb and its particle within the same prosodic unit, rather than as linearly adjacent. Still, it is

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[6]   We can confirm from preliminary analysis of the Fosen NWD data collected in November 2022 that we find verb-particles preceding pronominal objects. In addition, we also find several cases of NP subjects following particles (long particle shift) in this material.

important to remember here that inverted phrasal subjects always intervene between a main verb in V2 position and a particle, thus breaking up both the linear adjacency and the prosodic unity, e.g., *I går skjelte læreren ut eleven* (lit. *Yesterday yelled the teacher out the student*, 'Yesterday, the teacher scolded the student'). Thus, a factor like semantic unity could only affect the linear order when the arguemt and the particle/adverb are inside the same syntactic domain (VP or TP/midfield).

For particles, the presence of a PP that expresses the ground of the particle has an effect on linear order, e.g., *ut av puben* ('out of the pub'), compared to *ut* ('out'). It is not clear if the particle has a different syntactic status when followed by a PP, e.g., if the particle in this case is a modifier of the PP rather than a modifier or complement of the V/VP (see Larsson & Lundquist 2022b for discussion). The presence of a PP does not have an effect on word order in the other languages in NWD, but that might be due to the fact that Swedish, Danish and Faroese have no variation in particle placement (Larsson & Lundquist 2022a, Larsson & Tengesdal 2022, Lundquist 2020), and that the Object>Particle order is more general in Icelandic compared to Norwegian (see Larsson 2022).

For the placement phrasal subjects with respect to negation and other adverbs, we find that factors other than information structure have strong effects on linear order. First, the choice of adverb has a large effect: negation typically precede NP subjects, while the other adverbs typically follow NP subjects. It is not clear if this pattern can be explained by making reference to the clausal position of the adverb, if it is a frequency/collocation effect (negation being the most frequent adverb), or if it is just an idiosyncratic pattern for negation. Importantly, though, variation in placement *is* found both with negation and the other adverbs, suggesting that there are no fixed templatic positions for the adverbs with respect to subjects. Secondly, we find a strong effect of elicitation method. In the second part of the experiment, we elicited a much higher proportion of Subject>Negation order than in the first part, even in the cases when the target sentence was potentially the same; cf. the background examples in (31a–b) below, with (31c) as the intended target.

(31) a. Studenten   kommer ikke til   å   dra   hjem   (Background 1)
        student.DEF comes   not   INF   go   home
        til   foreldrene.
        to   parent.PL.DEF
        'The student will not go home to the parents.'
     b. Studenten   dro   ikke hjem   til   (Background 2)
        student.DEF went   not   home   to
        foreldrene   i fjor.
        parent.PL.DEF   last year
        'Last year, the student did not go home to the parents.'
     c. I fjor   dro   {ikke   studenten} hjem   til   (Target)
        last y. went   not   student.DE} home   to
        foreldrene.
        parent.PL.DEF
        'Last year, the student did not go home to the parents.'

Considering information structure, it is unclear why a reader/speaker would infer a different information structure role of the subject in (31a) compared to (31b); changing the tense should not obviously affect information structure. The Swedish NWD results show the same effect of elicitation method (Larsson & Lundquist 2022a). A possible explanation is that this is an effect of syntactic or prosodic priming. In the first part of the experiment (31b), the participant reads the main verb directly preceding the negation in the background sentence. It is likely that the reader temporarily stores the verb–negation sequence either as a prosodic word, or as an ordered/linearized pair, that can be re-used in the target sentence. In the second part of the experiment, the main verb and the negation are

not linearly adjacent in the background sentence, and the participant thus cannot re-use the verb–negation sequence in the target sentence. Still, a more detailed prosodic study of the relation between verb and negation in the variable cases is needed in order to better understand the effect of priming (syntactic or prosodic) and information structure.

The effect of information structure is also limited or completely absent in other cases, since there is no word order flexibility to begin with. For example, there is a categorical lack of NP object shift in Norwegian, even in cases when the NP object is given, in contrast to Icelandic, and West Germanic languages like German and Dutch, where scrambling could be more straightforwardly linked to information structure (see, e.g., Hinterhölzl 2012; Andréasson 2013, but also Struckmeier 2017 for problems with information structure-driven approaches to scrambling). The strict midfield ordering of objects with respect to subjects, i.e., the absence of long object shift, also restricts potential word order shifts: a non-contrastive object pronoun will end up after sentence adverbs as long as the subject surfaces after the sentence adverb. In short, the effect of information structure on the ordering of midfield or VP elements is highly limited (and possibly non-existent). The effects of syntactic function (subject vs. object vs. adverb) is on the other hand highly salient, and so is the effect of form, i.e., light pronouns contra NPs. Still, the variation that we find within and across speakers in this tightly controlled production experiment suggests that word order is not fully determined by either syntax or information structure.

The role of prosody has not been Investigated in this article, but the database enables this sort of analysis, and it is likely that it will carried out in the near future. As we mentioned in Section 4, at present we only have a few speakers from Trøndelag and Western Norway in NWD. This means that we cannot rule out more variation, especially in certain areas of the country (see Footnote 4). The database is open to be expanded, and new material from Trøndelag and Tromsø will be added in 2023.

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