1 Introduction
Norwegian is commonly used in the literature to exemplify the binding domain of reflexives. The descriptions and examples are taken from Hellan (1988, 1991), who concludes with the claim summarized in (1):

(1) In Norwegian, the 3.person reflexive seg is freely bound out of non-finite complement clauses, but cannot be bound out of a finite complement clause (1988:73, 84, 1991:30f.).

(1) makes the condition of morphological finiteness decisive for the binding domain of seg. This paper shows that another condition, tense, is a stronger factor than finiteness, such that (1) is violated if the construction satisfies the condition stated in (2) – the descriptive hypothesis in this paper:

(2) In Østfold Norwegian (ØN), the 3.person reflexive seg can be bound out of a tenseless complement clause.

(2) makes no reference to the finite status of the complement clause, as it holds for finite and non-finite clauses alike.

The fact in (2) follows as a consequence of the movement operations applied independently for reflexive binding and restructuring of tenseless complement clauses. As a result, (2) is analyzed as a restructuring effect in this paper, as stated in (3), to be outlined in detail in section 5:

(3) Non-local binding of the 3.person reflexive seg in ØN is a restructuring effect.

Given the differences in binding facts among the many Norwegian dialects (Strahan 2003), the judgments in this paper, obtained through pairwise comparisons, have been collected only from speakers from the state of Østfold, located in the south-east corner of Norway.

2 Norwegian binding
Norwegian has a rather intricate system of pronominals, in that a pronoun is either reflexive or non-reflexive, and simple or complex. All four possibilities exist, as illustrated in (4):

Non-local binding in tenseless clauses
Sverre Stausland Johnsen
Harvard University
(4) Masculine 3.sg.  

<table>
<thead>
<tr>
<th>Reflexive</th>
<th>Bare</th>
<th>Complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>seg</td>
<td>seg</td>
<td>sjøl</td>
</tr>
<tr>
<td>Non-reflexive</td>
<td>han</td>
<td>han sjøl</td>
</tr>
</tbody>
</table>

The bare pronouns are furthermore possessive or non-possessive:

(5) Masculine 3.sg.  

<table>
<thead>
<tr>
<th>Reflexive</th>
<th>Possessive</th>
<th>Non-possessive</th>
</tr>
</thead>
<tbody>
<tr>
<td>sin</td>
<td>seg</td>
<td></td>
</tr>
<tr>
<td>Non-reflexive</td>
<td>hans</td>
<td>han</td>
</tr>
</tbody>
</table>

For the reflexive binding cases discussed in this paper, the focus will be limited to the non-possessive bare 3.sg./pl. seg, for the following reasons:

First of all, only the third person reflexive is morphologically distinct from its non-reflexive counterpart (as seg-han above). In the 1./2.person, one form fills both roles. Second, ÖN conforms to Pica’s generalization, which states that complex reflexives cannot be bound non-locally (Pica 1987:485, Stausland Johnsen 2008:11). Since this paper treats non-local binding in ÖN, the complex reflexive seg sjøl falls out. Finally, although it is commonly assumed or explicitly claimed that the possessive reflexive sin undergoes the same binding conditions as seg (Hellan 1988:62, 74f., 1991:31, Faarlund et al. 1997:1164ff.), the only published case where that assumption is tested shows that it does not (Strahan 2003:89). Given similar evidence in ÖN (Stausland Johnsen 2007), and the fact there is no reason to assume a priori that sin and seg behave identically, the possessive sin is not treated in this paper. For the distribution of these pronominal forms not discussed in this paper, see Hellan (1988:59ff.,) and Stausland Johnsen (2008:3ff.)

‘Non-local binding’ as used here subsumes the terms ‘medium-distance binding’ (binding out of a non-finite clause) and ‘long-distance binding’ (binding out of a finite clause), as distinguished by Reuland & Koster (1991:23f.). Put in traditional theoretical terms, non-local binding are instances of violation of Chomsky’s binding condition A (Chomsky 1981:188).

There are many factors that will allow or inhibit non-local binding in Norwegian, and some of them have been established in the literature already, such as logophoricity (Moshagen & Trosterud 1990, Strahan 2001), animacy of the local subject (Lødrup 2009), and factivity of the matrix verb (cf. Strahan 2003:89ff.). There are several factors influencing the possibility for non-local binding in ÖN as well, and this paper will isolate one of these factors: tense. The role of tense does not seem to have been acknowledged as a factor in binding previously in the literature – for any language.
3 Østfold Norwegian (ØN) binding data
3.1 Finite complements
Most matrix verbs do not allow a non-locally bound seg in their finite complements, exemplified below with the declarative sa ‘said’, the epistemic trudde ‘believed’, and the psych-verb frykta ‘feared’:

(6a) *Reven, sa [at noen jakta på seg,]
The-fox said that someone chased on refl
‘The fox said that someone was hunting him’

(6b) *Reven, trudde [at noen jakta på seg,]

(6c) *Reven, frykta [at noen jakta på seg,]
The-fox said/believed/feared that someone chased on refl
‘The fox said/believed/feared that someone was hunting him’

(6d) *Reven, hørte [at noen jakta på seg,]

(6e) *Reven, så [at noen jakta på seg,]

(6f) *Reven, lukta [at noen jakta på seg,]

(6g) *Reven, drømte [at noen jakta på seg,]
The-fox heard/saw/smelled/dreamed that someone chased on refl
‘The fox heard/saw/smelled/dreamed that someone was hunting him’

When the matrix verb is a perception verb or the verb for ‘dream’,¹ on the other hand, a non-locally bound reflexive is allowed in its finite complement, as seen in the equivalent examples of (6)-(9) below:²

(7a) *Per, sa [at noen snakka om seg,]
Peter said that someone talked about refl
‘Peter said that someone was talking about him’

(8a) *Per, sa [at noen la et håndkle rundt seg,]
Peter said that someone laid a towel around refl
‘Peter said that someone put a towel around him’

(9a) *Hunden, trudde [at noen leika med seg,]
The-dog believed that someone played with refl
‘The dog believed that someone was playing with him’

¹ The verb for ‘dream’ often groups with perception verbs where the latter is a relevant grammatical category for some phenomenon, as frequently encountered for evidentiality (cf. Aikhenvald 2003:22, 2004:344ff.).
² The examples have been marked with one question mark to render the fact that when asked for judgments, speakers tend to indicate their preference for a complement with a non-reflexive pronoun.
(7b) ?Per, hørte [at noen snakka om seg]                                      
Peter heard that someone talked about REF
‘Peter heard that someone was talking about him’

(8b) ?Per, kjente [at noen la et håndkle rundt seg]                      
Peter felt that someone laid a towel around REF
‘Peter felt that someone put a towel around him’

(9b) ?Hunden, drømte [at noen leika med seg]                            
The-dog dreamed that someone played with REF
‘The dog dreamed that someone was playing with him’

Given that the only overt difference between the constructions in the first and second group of examples is in the matrix verb, it is tempting to link this with previously observed effects of the matrix verb for non-local binding, namely the matrix verb’s ability to license a logophoric or factive complement (see end of section 2 above). Perception verbs, however, do not license logophoric pronouns (Culy 1994:1061), and dream is not a factive (Simons 1997:1036), so these explanations are not available here.3

3.2 Non-finite complements
In constructions with object control (OC) or ECM matrix verbs, some allow a non-locally bound reflexive in their complements, and some do not, as seen in the following examples:

(10a) *Læreren, ba elevene [PRO stå bak seg] OC
       The-teacher told the-students stand (inf.) behind REF
       ‘The teacher told the students to stand behind him’

(10b) ?Læreren, lot elevene [PRO stå bak seg] OC
       The-teacher let the-students stand (inf.) behind REF
       ‘The teacher let the students stand behind him’

(10c) Læreren, så [elevene stå bak seg] ECM
       The-teacher saw the-students stand (inf.) behind REF
       ‘The teacher saw the students stand behind him’4

---

3 Reuland & Koster (1991:23f., Reuland 2006:96) make the strong claim that the only binding that is possible out of finite clauses is logophoric binding. ON binding as demonstrated in this section is evidence to the contrary.

4 (10c) is considered better than (10b), but (10c) does not have the same clausal structure as (10b). Whether the structure in (10c) contains an ECM-clause or a small clause is not crucial here, as it under any approach is different from an OC construction. Since clausal structure has been intensively investigated for Norwegian binding before (see (1)), I will not discuss this further here.
In the next section, we will see that the one thing that unifies the verbs that allow non-locally bound reflexives in their complements – perception verbs and the verbs *dromme* ‘dream’, *la* ‘let’, and *tvinge* ‘force’ – is that they select tenseless complements.

4 Tenselessness

Tense and finiteness do not necessarily correlate. As a result, non-finite clauses can be either tensed or tenseless (Stowell 1982:562ff., Landau 2000:57, 2004:836, Wurmbrand 2001:62ff., Wiklund 2007:38f.). Importantly, the same holds for finite clauses – they can either be tensed or tenseless (cf. Varlokonta & Hornstein 1992:515ff, Krapova 2001:117ff., Landau 2004:831ff., Radišić 2006:9). As a standard example of this distinction for non-finite clauses, cf. the difference between (12a) and (12b) below:

(12a) John planned [to leave tomorrow].
(12b) *John tried [to leave tomorrow].

In (12a), the non-finite clause carries a future tense specification with respect to the matrix clause, and it can therefore be modified with a temporal adverb *tomorrow*. In (12b), on the other hand, the non-finite clause has no tense, and can therefore not be modified by a temporal adverb that contradicts the tense of the matrix clause.

4.1 Tenselessness in Østfold Norwegian

Wiklund (2007) demonstrates the tense properties of non-finite clauses in Scandinavian. The evidence is of the kind in (12) above, and need not be repeated here (see Wiklund 2007:38ff.). The important conclusion is that the verbs *be* ‘tell’ and *beordre* ‘order’ have tensed complements (2007:48), whereas the verbs *la* ‘let’, *se* ‘see’, and *tvinge* ‘force’ have tenseless complements (2007:53, 56, 63).
As seen in section 3.2 above, the tenseless complements correlate with the possibility of non-local binding.\(^5\)

No evidence has been given in the literature of tenseless finite clauses in Scandinavian, so the remainder of this section will present the evidence that the finite complement clauses of perception verbs (and drømme ‘dream’) are tenseless in ØN. In short, there are three domains in which this evidence manifests itself:

1) Sequence of tenses (SOT)
2) Double access reading (DAR)
3) Temporal adverb disagreement

The unique behavior of the complement clauses of perception verbs in these domains supports the conclusion that they are tenseless, as will be seen in the following.

### 4.1.1 Sequence of tenses (SOT)

In a past-under-past construction as (13), there are two available interpretations of the subordinate past: *simultaneous* with the matrix tense (13a), or *past-shifted* with respect to the matrix tense (13b) (Enç 1987:635):

\[
\begin{align*}
(13) & \quad \text{John said that Mary was pregnant} \\
(13a) & \quad \text{John said: “Mary is pregnant”} \\
(13b) & \quad \text{John said: “Mary was pregnant”}
\end{align*}
\]

The simultaneous reading in (13a) is called an ‘SOT reading’. Just as in English, ØN exhibits the same optionality between an SOT or past reading of a subordinate past verb form:

\[
\begin{align*}
(14) & \quad \text{Peter said that Kate was with child} \\
(14a) & \quad \text{Peter said: “Kate is pregnant”} \quad \text{SOT} \\
(14b) & \quad \text{Peter said: “Kate was pregnant”} \quad \text{past}
\end{align*}
\]

When the matrix verb is a perception verb, on the other hand, the SOT reading of the finite complement clause becomes obligatory:

\[
\begin{align*}
(15) & \quad \text{Peter saw that Kate was with child} \\
(15a) & \quad \text{Peter saw: /Kate is pregnant/} \quad \text{SOT} \\
(15b) & \quad \text{*Peter saw: /Kate was pregnant/} \quad \text{past}
\end{align*}
\]

\(^5\) For a complete list of the relevant non-finite clauses in ØN and their binding properties, see Stausland Johnsen 2008:45ff.
(16) Per dømte [at Kari var med barn]  
   Peter dreamed that Kate was with child

(16a) Peter dreamed: /Kate is pregnant/    SOT
(16b) *Peter dreamed: /Kate was pregnant/    past

The simultaneous reading of the morphological past in SOT constructions is
standardly analyzed as the result of clausal tenselessness (Ogihara 1995:674, von
2007:106). The obligatory SOT reading under perception verbs in ØN would
imply that perception verbs select for tenseless complements in ØN.6

The past morphology itself on the tenseless embedded verb has come about
through a copying or agreement operation with the matrix verb (Jespersen

4.1.2 Double access reading (DAR)
A complement with present morphology can be embedded under a matrix past
verb, as in (17), giving DAR. This means that the embedded present is evaluated
with respect to both the matrix tense and the utterance time (Enç 1987:636f.). In
the case of (17), for the sentence to be true, Mary must be pregnant both at the
time of John’s utterance and at the time of the utterance of the sentence itself.

(17) John said that Mary is pregnant

The same phenomenon occurs in ØN, as exemplified in (18):

(18) Per sa [at Kari er gravid]  
   Peter said that Kate is pregnant
   ‘Peter said that Kate is pregnant’

When the matrix verb is a perception verb in the past, however, a verb with
present morphology cannot be embedded under it:

---

6 The SOT reading in (14a) is also due to tenselessness in the complement. Unlike (15)-(16),
the SOT reading in (14) is optional. This is analogous with the interpretation of pronouns.
Regular pronouns are optionally free or bound, whereas reflexives must receive a bound reading.
The interpretational optionality of pronouns takes place at LF, whereas the obligatory bound
reading of reflexives is due to properties in narrow syntax (Reuland 2001a:440f.). In the same
vein, the optionality we see in (14) takes place at LF (Ogihara 1995:673ff., Abusch 1997:12ff.),
whereas the obligatory bound reading of the tense in (15)-(16) is due to the selectional restrictions
in narrow syntax. As a result, it is expected that operations in one domain of narrow syntax
(obligatory SOT) correlate with operations in another domain of narrow syntax (obligatory
binding). It is not expected that the outcome of an LF operation (optional SOT) has consequences
for operations in narrow syntax (obligatory binding). In sum, we do therefore not predict an
optional SOT reading of the sentences in (6)-(9) above to license non-local binding.
(19) *Per så [at Kari er gravid]

Peter saw that Kate is pregnant
‘Peter saw that Kate is pregnant’

The ungrammaticality of (19) follows from the discussion of SOT in section 4.1.1 above. If perception verbs select for tenseless complements, they cannot select a clause with present morphology embedded under past morphology, since the present morphology in such a construction denotes temporal simultaneity (Enç 1987:642, Stowell 2007:446), which is not the same as tenselessness. Furthermore, if the embedded clause is tenseless, it cannot acquire present morphology through copy/agreement with the matrix verb, since the matrix verb in this case has past morphology. (19) is therefore correctly ruled out in ØN as a consequence of the analysis given for the obligatory SOT in (15)-(16).

4.1.3 Temporal adverb disagreement

The standard test for proving tenselessness in a complement clause is to let a temporal adverb in the complement contradict a temporal adverb in the matrix clause (Varlakosta & Hornstein 1992:516, Landau 2000:57, 2004:831ff., Krapova 2001:117, Wurmbrand 2001:74, Radišić 2006:9, Wiklund 2007:38ff.). If the complement has no tense, the adverb can be interpreted only if it takes matrix scope. If there already is a temporal adverb taking matrix scope, however, and the adverbs contradict each other, this disagreement cannot be reconciled. As a result, an ungrammatical outcome of this test is a proof of complement tenselessness. An example of this test for English can be seen in (20):

(20a) This morning, John planned to leave tomorrow 

(20b) This morning, John tried to leave (*yesterday)/(tomorrow) 

For finite complements, conflicts between temporal adverbs as in (20) are allowed for all kinds of matrix verbs in ØN except perception verbs, as seen in (21):

(21a) I dag sa Per [at det regna i fjord]
(b) I dag visste Per [at det regna i fjord]
(c) I dag huska Per [at det regna i fjord]
(d) I dag frykta Per [at det regna i fjord]
(e) I dag så Per [at det regna (*i fjord)]
(f) I dag hørte Per [at det regna (*i fjord)]
(g) I dag kjente Per [at det regna (*i fjord)]

Today remembered/fearred Peter that it rained last year

The outcome of the temporal adverb disagreement test is therefore that the finite complement clauses of matrix perception verbs are tenseless.
4.2 Conclusion

The conclusions from all three tests in section 4.1 taken together provide ample evidence that the finite complement clauses of perception verbs are tenseless in ØN. Combined with the already available evidence that the non-finite complement clauses of certain OC and ECM verbs such as la ‘let’, se ‘see’, and tvinge ‘force’ are tenseless, we see that there is an evident correlation between the tenselessness of a complement clause and its ability to license non-local binding. For ØN, then, we can sum up the descriptive facts with the statement in (22):

\[(22)\text{ Complement tenselessness licenses non-local binding}\]

5 Analysis

5.1 Restructuring

‘Restructuring’ is a cover term for language specific phenomena which all share the following characteristic, quoted from Roberts 1997:423:

\[(23)\text{ ‘[...] processes and dependencies that are normally limited to a single clause, can, where the higher predicate is of a particular type, take place across clause boundaries’}.\]

A recurring restructuring effect is that a syntactic item which is interpreted as the internal argument of the embedded verb has an overt morphosyntactic realization as the internal argument of the matrix verb. The classic cases of restructuring – clitic climbing and long passives – both share this characteristic.


5.2 Binding through movement


When an embedded reflexive is bound structurally (i.e. not logophorically) by the subject in the matrix clause, it follows under this approach that the embedded
T must have undergone an independent movement to the matrix T, with pied-piping of the reflexive.

This is essentially the model that Reinhart & Reuland adopt in order to account for the non-local binding examples in Hellan (1988), where the reflexive \( \text{seg} \) in a non-finite complement clause is bound by the matrix subject (1991:302ff., Reuland 2001b:355, Reuland 2006:97ff.):

\[
\text{(24) } \begin{align*}
\text{John} & \quad \text{bad} \quad \text{oss} \quad \text{[snakke om seg]}^7 \\
\text{John asked us to talk about \text{REFL}} & \quad \text{‘John asked us to talk about him’}
\end{align*}
\]

In (24), the embedded reflexive moves covertly to the T-projection in its clause. Independently of that, the embedded T raises to the matrix T, making non-local binding in these cases a by-product of pied-piping (Reuland 2006:97). As Reuland acknowledges, the main problem with this analysis is that no motivation or trigger for this verb movement is identified.

5.3 Non-local binding from restructuring

In ØN, tenseless complement clauses undergo restructuring, by which the embedded T raises to the matrix T. If the embedded clause contains a reflexive, it will be pied-piped to the matrix clause and bound by the matrix subject, as proposed by Reinhart & Reuland. The lacking trigger for the interclausal verb movement in Reinhart & Reuland’s model is therefore apparent in ØN – tenselessness.

As a result, there is no need for any extra stipulations to account for the non-local binding cases addressed in this paper. Non-local binding can be treated as an automatic consequence of independent processes taking place in ØN. Non-local binding bears furthermore the hallmarks of a restructuring effect. In the same fashion as clitic climbing and long passives, non-local binding is characterized by having an internal argument of the embedded verb (the reflexive \( \text{seg} \)) realized as if it were the internal argument of the matrix verb (i.e. as a locally bound reflexive \( \text{seg} \) rather than a non-reflexive pronoun).

6 Restructuring in Østfold Norwegian

Restructuring is a process that manifests itself with tenseless complements in ØN also outside of the non-local binding cases discussed in this paper. It is therefore important to emphasize that restructuring is not posited solely to account for non-

\[^7\text{Note, however, that (24) is ungrammatical in ØN.}\]
local binding. It exists independently of the binding facts. This section will summarize the other restructuring effects in ØN.

In some Swedish and Norwegian dialects, among them ØN, the embedded verb in non-finite tenseless clauses will enter a copy/agreement relation with the matrix verb, and take on the tense morphology of the matrix verb, as illustrated in (25)-(26):

(25) \( 	ext{Ikke } \) \( gidd \) \( pro_i \) \( [\dot{a} \ PRO_i \ gjor \ det] \)
    Not bother (imp.) to do (imp.) it
    ‘Don’t bother to do it’

(26) \( Jeg_i \) \( har \) \( ikke \) \( giddi \) \( [\dot{a} \ PRO_i \ gjort \ det] \)
    I have not bothered (perf.) to done (perf.) it
    ‘I have not bothered to do it’

The verb copying in (25)-(26) occurs as the embedded tenseless verb raises to the matrix verb by restructuring (Wiklund 2007:164).8

6.1 Verb agreement & non-local binding

A prediction following from the facts of verb agreement and non-local binding in non-finite clauses discussed above is that OC and ECM verbs which trigger verb agreement in their complements will be the same verbs that license non-local binding in their complements. The following examples show that this prediction holds true:

**la** ‘let’

Verb copying

(27) \( Jeg \) \( hadde \) \( ikke \) \( latt \) \( n_i \) \( [\dot{a} \ PRO_i \ gjort \ det] \)
    I had not let (perf.) him done (perf.) it
    ‘I would not have let him do it’

Non-local binding

(28) \( ?\text{Læreren}_i \) \( lot \) \( elevene_j \) \( [\dot{a} \ PRO_j \ stå \ bak \ seg_i] \)
    The-teacher let the-students stand (inf.) behind REFL
    ‘The teacher let the students stand behind him’

---

8 When restructuring applies to tenseless finite complements, as discussed in section 4, the verbs agree in their finite forms, i.e. pres.-pres. and pret.-pret. When restructuring applies to tenseless non-finite complements, as discussed in this section, the verbs agree only in their non-finite forms, i.e. inf.-inf., imp.-imp., and perf.-perf. Wiklund (2007:88) classifies the distinction between finite and non-finite agreement as ‘full’ and ‘graded’ restructuring respectively. It lies outside the scope of this paper to investigate the relationship between clausal structure and verb agreement further.
se ‘see’

Verb copying

(29) Jeg har ikke sett ['n gjort det]
    I have not seen (perf.) him done (perf.) it
    ‘I have not seen him do it’

Non-local binding

(30) Læreren så [eleveneståbaksegj]
    The-teacher saw the-students stand (inf.) behind REF
    ‘The teacher saw the students stand behind him’

be ‘tell’

Verb copying

(31) *Jeg hadde ikke bett 'n [PRO gjort det]
    I had not told (perf.) him done (perf.) it
    ‘I would not have told him to do it’

Non-local binding

(32) *Læreren ba elevene [PROjståbaksegj]
    The-teacher told the-students stand (inf.) behind REF
    ‘The teacher told the students to stand behind him’

In the examples above, the matrix verbs la ‘let’ and se ‘see’ select tenseless complements and allow both verb copying and non-local binding to take place. The matrix verb be ‘tell’, on the other hand, selects a tensed complement, and as a result, does not allow either verb copying or non-local binding.

7 Conclusion

This paper has provided evidence that in Østfold Norwegian, tenseless complement clauses license non-local binding of reflexives. Tenseless complements also trigger restructuring to take place. Within the movement theory of restructuring and reflexive binding, the non-local binding cases in ØN fall out as restructuring effects.

As a result, two syntactic phenomena in ØN that are seemingly quite unrelated – interclausal verb agreement and non-local binding – can be seen as effects of one single operation, namely T-to-T raising across clauses, or in short: restructuring.

ØN seems to be the first language where tense, as opposed to finiteness, can be demonstrated to restrict the binding domain. That this phenomenon has not been reported for Norwegian before, however, gives promise that the same effect is underreported or undiscovered in other languages, too. More research on
similar ‘peripheral’ binding cases in this and other languages might reveal how other, seemingly unrelated, aspects of the grammar might influence and restrict (or widen) the binding domain of reflexives.

References