Methodological problems related to research on L2 Norwegian anaphors

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This article focuses on the methodological challenges involved in investigating anaphoric binding in Norwegian as a second language. Norwegian anaphors can be bound both locally and non-locally, and since anaphors vary cross-linguistically, it is interesting to explore whether and where L2 speakers of Norwegian allow such target-like local and non-local binding in their L2. Sentences with two possible antecedents might be ambiguous for L2 speakers, and the truth-value judgment task is generally considered to be the best method for eliciting knowledge of L2 speakers' intuitions of anaphoric binding in ambiguous sentences. In Norwegian, long-distance binding cannot cross a finite clause boundary, and the long-distance anaphor cannot be locally bound. Because of this, the truth-value judgment task is sometimes less adequate for testing all relevant binding structures in Norwegian. Dialectal variations in Norwegian pose additional challenges for the study of the acquisition of anaphors in an L2. This paper discusses the implications of these methodological challenges.

Keywords anaphors, dialectal variation, long-distance binding, L2 acquisition, methodological problems, truth-value judgment task

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1. INTRODUCTION

In this article, I discuss some methodological problems related to research on L2 acquisition of Norwegian reflexive binding. First, I review the research on anaphors and the system of Norwegian anaphors. Then, I discuss the methodological challenges related to the study of anaphoric binding and explain why some features of the Norwegian system make the well-known truth-value judgment task inadequate. The dialect situation of Norway presents additional challenges to the design of L2 acquisition studies. I discuss those challenges and their potential implications for L2 research on anaphoric binding. This article presents the methodological issues I have encountered in the preparatory investigations to a study on L2 acquisition of Norwegian anaphors.[1] I am in the inception of a Ph.D. project, which investigates L2 learners of Norwegian with Chinese, Russian and English as their respective L1s. So far, only some of the results form the Chinese group are close to ready.

The system of Norwegian anaphor binding adds some interesting complications to the traditional methods used for investigating L2 acquisition of anaphoric binding in other languages. The article discusses these issues as well as the development of appropriate methods.

2. ANAPHORS

2.1 Why study L2 acquisition of anaphors

Anaphoric binding has been the subject of several detailed L1 and L2 acquisition studies. Some researchers believe that studying anaphoric binding may lead to a more thorough understanding of Universal Grammar (UG):

> [T]he syntactically determined pattern of anaphora appears to be a portal into the internal architecture of the human linguistic faculty. . . . [T]he grammar of anaphora must reflect the deeper properties of *universal grammar* . . . Thus we may expect that the formal mechanisms and principles posited to account for anaphora reflect at an even more general level the mechanisms and principles from which UG is constructed. (Safir 2004:4)

Cross-linguistic variation in anaphoric binding is determined by a very restricted set of parameters, which makes anaphoric binding an interesting phenomenon for L2 research. The cross-linguistic variation is likely to be constrained by UG, and research on anaphoric binding in L2 may shed light on the relationship between UG and L1 in L2 acquisition. Most of the earliest research focused on this relationship and the possibility of parameter resetting in L2 (Hirakawa 1990; Broselow & Finer 1991; Finer 1991; Lakshmanan & Teranishi 1994).

2.2 Norwegian anaphors and cross-linguistic variation

Cross-linguistically, anaphors vary in DOMAIN and ORIENTATION. Norwegian anaphors are subject-oriented, which means that they can only be bound to subject antecedents.[2] In (1), the subject *Mari* is the only possible antecedent for the anaphor *seg selv*; the object *Anne* is not a felicitous antecedent. (In the gloss, I have adopted Reinhart & Reuland's (1993) convention: SELF refers to the complex anaphor *seg selv* and SE to the morphologically simple *seg*).

(1) Mari_i fortalte Anne_j om   seg selv$_{i/*j}$.
    Mary told   Anne   about SELF
    'Mary$_i$ told Anne$_j$ about herself$_{i/*j}$.'

English anaphors are object-oriented. In (2), both *Mary* and *Susan* are possible antecedents for *herself*:

(2) Mary$_i$ told Susan$_j$ about herself$_{i/j}$.

'Object-oriented anaphors' may be a misnomer since such anaphors always allow subject antecedents, but can also take object antecedents. This topic has been widely studied (Read & Chou Hare 1979:110; Hirakawa 1990:77; White et al. 1997); even though objects are possible antecedents in English, most L1 speakers prefer subject antecedents. Subject-oriented anaphors, in contrast, only allow subject antecedents.

Anaphors also vary with respect to binding domains. For the purpose of this article, the local domain is defined as the most local subject–predicate relationship.[3] Norwegian anaphors can be bound both locally and non-locally. The morphologically complex Norwegian anaphor *seg selv* can only be bound within its local domain in accordance with Binding principle A – 'An anaphor is bound in its governing category' (Chomsky 1981:188) – as in (3).

(3) Jon$_i$ vet   at   Knut$_j$ elsker seg selv$_{*i/j}$.
     Jon knows that Knut loves SELF
     'Jon$_i$ knows that Knut$_j$ loves himself$_{*i/j}$.'

In (3), the anaphor *seg selv* must be bound by *Knut*. This binding occurs in the smallest clause containing both the anaphor and a possible antecedent. *Jon* is not a possible antecedent because it is not in a local relationship with the anaphor. Some anaphors allow for an antecedent outside the local domain. The morphologically simple Norwegian anaphor *seg* is such an anaphor. In (4), *seg* is bound to the non-local antecedent *Marit*. This is LONG-DISTANCE BINDING.[4]

(4) Marit$_i$ ba   Jon$_j$ høre   på seg$_{i/*j}$.
     Marit asked Jon listen to SE
     'Marit$_i$ asked Jon$_j$ to listen to her$_{i/*j}$.'

Typologically, long-distance anaphors are quite rare. In languages employing such anaphors, the tendency seems to be for morphologically complex anaphors to be bound locally and simple ones both locally and non-locally. Kim, Montrul & Yoon (2009:14) call this 'the form–function correlation'. Büring (2005:74) points out another tendency: 'Languages that have only complex reflexives (like English) systematically lack LDRs [long-distance reflexives], and in those that have simple and complex forms (e.g. Icelandic) only the simple ones are found to be LDRs'. Busterud (2006:94) refers to this as the IMPLICATIONAL RELATIONSHIP between long-distance and local reflexives. Languages with long-distance anaphors also have locally bound anaphors, while languages with locally bound anaphors do not necessarily have long-distance anaphors. According to Huang (2000:93), there is a universal tendency for long-distance anaphora to be subject-oriented. This is also true for Norwegian *seg*.

In (5), the anaphor *seg* is bound by the long-distance antecedent *Per*. Interestingly, the local antecedent *Ola* is not a possible antecedent for *seg*. It seems that Norwegian *seg* can only be bound long-distance. This makes *seg* different from long-distance anaphors in several other languages.

(5) Per$_i$ hørte Ola$_j$ snakke om   seg$_{i/*j}$.
   Per heard Ola talk.INF about SE
   'Per$_i$ heard Ola$_j$ talk about him$_{i/*j}$.'

Another property of the Norwegian long-distance anaphor is that the binding cannot cross a finite clause boundary. Reuland & Koster (1991) call this 'medium-distance binding'. This pattern resembles the TENSED–INFINITIVE ASYMMETRY (Yuan 1994) identified in research on L2 anaphoric binding.[5] In (6), the subordinate clause is finite; therefore, *Per* is not a possible antecedent for *seg*. Since the anaphor cannot be bound by the local antecedent *Ola*, the sentence is ungrammatical in standard Norwegian. There is, however, dialectal variation with respect to the possible binding domain for the Norwegian long-distance anaphor *seg*. In some dialects, long-distance binding of *seg* across a finite clause boundary is grammatical. This is discussed in Section 4 below.

(6) *Per$_i$ hørte at   Ola$_j$ snakket om   seg$_{*i/*j}$.
    Per heard that Ola talked   about SE
   'Per$_i$ heard that Ola$_j$ talked about him$_{*i/*j}$.'

In languages such as Japanese and Chinese, the long-distance anaphor can be bound to an antecedent outside the minimal finite clause containing the anaphor. The Chinese anaphor *ziji* can also be bound to the local antecedent.[6] In (7), both the long-distance (*Zhangsan*) and the local (*Lisi*) antecedents are possible binders for *ziji*.

(7) Zhangsan$_i$ zhidao Lisi$_j$ chang zai bieren mianqian piping   ziji$_{i/j}$.
   Zhangsan know Lisi often at others face   criticize SELF
   'Zhangsan$_i$ knows that Lisi$_j$ often criticizes him$_i$/himself$_j$ in the presence of others.'
                                                                (Huang, Li & Li 2009:331)

To construe long-distance binding in a Norwegian sentence like (6), one has to use a pronominal, as in (8a). Here the pronominal is free in its local domain (cf. Binding principle B). In the corresponding sentence in (8b), a morphologically complex anaphor refers to the local antecedent. In sentences allowing long-distance anaphors in Norwegian, the anaphor can almost always be replaced with a pronominal without changes in the interpretation, as in (8c).[7]

(8) a. Per$_i$ hørte at   Ola$_j$ snakket om   han$_{i/*j}$.
      Per heard that Ola talked   about him
      'Per$_i$ heard that Ola$_j$ talked about him$_{i/*j}$.'
   b. Per$_i$ hørte at   Ola$_j$ snakket om   seg selv$_{*i/j}$.
      Per heard that Ola talked   about SELF
      'Per$_i$ heard that Ola$_j$ talked about himself$_{*i/j}$.'
   c. Per$_i$ hørte Ola$_j$ snakke om   seg$_{i/*j}$/han$_{i/*j}$.
      Per heard Ola talk.INF about SE/him
      'Per$_i$ heard Ola$_j$ talk about him$_{i/*j}$.'

Norwegian has another anaphor that, on the surface, morphologically resembles the long-distance anaphor *seg*. This anaphor must be locally bound and occurs only with inherently reflexive verbs, as in (9).

(9) Per$_i$ skammer seg$_i$.
  Per shame   SE
  'Per is ashamed.'

Skamme 'shame' is an inherently reflexive verb, and it can take no internal argument other than the reflexive. Thus, the anaphor *seg* can only refer to the antecedent *Per*. Hellan (1988:111) calls these verbs SEG-DETRANSIVIZED because they obligatorily show up with a pronominal particle that is semantically a non-argument. The anaphor *seg* in (9) is such a non-argument, which is why *seg* must refer to the external argument of the clause, the subject. *Seg* is also a morphologically simple anaphor – it is monosyllabic and has no internal morphology.

However, there is a crucial difference between these two versions of *seg*. According to Hellan (1988:107), the anaphor *seg* used in long-distance binding is a semantic argument, quite unlike *seg* in (9), which functions as a syntactic marker of an inherently reflexive verb and is clearly not a semantic argument. Some scholars have analyzed this version of *seg* as a reflexive particle (e.g. Åfarli 1997:108f.).

To summarize, cross-linguistically, anaphors vary in orientation and domain. Norwegian anaphors are subject-oriented. Norwegian has local and non-local anaphors; they are in complementary distribution and mutually exclusive.

3. METHODOLOGICAL PROBLEMS IN L2 RESEARCH ON ANAPHORIC BINDING

3.1 General problems

In linguistic research, it is desirable to use naturalistic data from spontaneous production. However, this type of data is often difficult to access. Klein & Martohardjono (1999:18) explain that spontaneous production is often hampered by AVOIDANCE FACTORS: L2 learners consciously or subconsciously avoid using structures they perceive as difficult. Anaphor constructions are seemingly considered difficult by L2 learners. This is reflected in their being rare in written Norwegian L2 corpora.[8] Hence, it is necessary to apply experimental methods to tap the L2 learners' competence. Experimental research methodology allows us to elicit production of structures that are infrequent in spontaneous production: 'Controlled data has the advantage that it yields the information we are looking for' (Cook 1986:13).

In generative L2 research, we want to obtain knowledge about the learners' L2 competence. This makes it necessary to determine which sentences the learners

perceive as grammatical and ungrammatical in the L2. A common problem is that traditional methods tap the learner's PREFERENCE, not competence. Sentence (10) illustrates this problem.

(10) Tom_i showed $Peter_j$ a picture of $himself_{i/j}$.

In English, both *Tom* and *Peter* are possible antecedents for the anaphor *himself*. If one asks an informant whether this sentence is grammatical, one will never know which interpretation the informant is considering. The informant may consider only one of the readings or both, but the answer 'acceptable/unacceptable' does not indicate which interpretation is referred to in the acceptability judgment. This is also a problem when testing orientation:

(11) $Peter_i$ ba Jon_j hjelpe $seg_{i/*j}$.
      Peter asked Jon help.INF SE
      '$Peter_i$ asked Jon_j to help $him_{i/*j}$.'

In L1 Norwegian, there is only one possible reading of this sentence. However, the corresponding sentence in Chinese is ambiguous: both the local and the long-distance subjects are possible antecedents for the anaphor. An L2 learner of Norwegian may allow local interpretation of the anaphoric binding even if this is not possible in the target language (because the option is allowed by UG).[9] If theL2 learner judges this sentence as grammatical/acceptable, we will not know whether this means that she accepts both *Peter* and *Jon* as possible antecedents. The informant may consider only one of the two antecedents, but we will not know which one.

In sentences with two possible antecedents, there are always two possible interpretations. In ambiguous sentences, the researcher will never know which interpretation the informant is referring to if only a grammaticality judgment task is used. The researcher will also not know which interpretation, if any, the informant considers ungrammatical.

3.2 The truth-value judgment task in L2 research on anaphoric binding

The TRUTH-VALUE JUDGMENT TASK (Crain & McKee 1985) is considered the best test for eliciting L2 learner competence on anaphoric binding (Gass 2001). The task was developed for investigating children's competence in L1 acquisition, but the problem of ambiguous interpretation is the same for L1 and L2 acquisition:

> In situations corresponding to a single interpretation, of course, a child
> or adult will assign the appropriate interpretation. But in situations that are
> compatible with more than a single reading of a sentence, one interpretation
> might consistently win out. Because the "meaning" is not controlled for in
> the act-out task, children's response are likely to be influenced by the kinds

of factors that make one reading preferred over others. The truth-value judgment task is an aid in this situation. (Crain & Thornton 1998:211)

In the truth-value judgment task, the informant's judgments are based on contextual information. The context makes only one interpretation possible. The informant has to evaluate whether the ambiguous sentence is true or false in a given context. As Crain & Thornton (1998:210, referring to Davidson 1967) point out, '[t]here is an intimate connection between the meaning of a sentence and the set of contexts in which it is true'. The designer of the experiment controls the contexts as well as the possible meanings.

This method makes it easier to force the non-preferred interpretation of an ambiguous sentence. Examples of the method (taken from my ongoing project on L2 acquisition of Norwegian anaphora) are shown in (12). In investigating whether L2 learners of Norwegian accept both local and long-distance binding of *seg selv*, two contexts are necessary: one that forces the local reading and one that forces the long-distance reading, as in (12a) and (12b), respectively.

(12) a. Det har snødd mye, og Marianne trenger hjelp til å måke vekk all snøen.
      Marianne ringer faren og ber ham om hjelp til å måke snø.
         Marianne ber faren hjelpe seg selv.
            ☐ Sant   ☐ Usant
      'It has been snowing a lot, and Marianne needs help to clear the snow away.
      Marianne calls her dad, and asks him for help to clear the snow away.
         Marianne asks her father to help SELF.
            ☐ True   ☐ False'
    b. Anne er komiker. Når Anne er på scenen forteller hun morsomme historier
      hun selv har opplevd. I kveld er Line publikum. Line ler godt av Annes
      historier.
         Line hørte Anne fortelle om seg selv.
            ☐ Sant   ☐ Usant
      'Anne is a comedian. When she is on stage, she usually tells stories from her
      own life. Tonight Line is in the audience. She is laughing at Anne's stories.
         Line heard Anne tell about SELF.
            ☐ True   ☐ False'

The context in (12a) forces the long-distance interpretation, while the context in (12b) forces the local one. For L1 speakers of Norwegian, *seg selv* can only be locally bound. Thus, (12a) is false according to the context because the local interpretation is the only grammatical option; (12b) is true when the context biases the local interpretation. If an L2 learner answers true for (12a), this implies that she allows long-distance binding for the anaphor *seg selv*, even though this interpretation is not possible for L1 speakers.

In its original form (Crain & McKee 1985:104), the stories in truth-value judgment tasks were acted out in front of the children being tested. In L2 research on anaphoric binding, the two different ways this task is usually applied are by means

of a story task and a picture task. In the story task, as in (12a, b), the informants are asked to read a story and indicate whether the sentence following the story is true or false in the context of that story. In the picture task, the informants see a picture with a sentence underneath and are asked to indicate whether the sentence matches what is going on in the picture. Alternatively, the informants are given two pictures and one sentence, and are asked which picture matches the sentence. The story and the picture tasks always favor one reading of the ambiguous sentence.

White et al. (1997) compared these two tests and found that the story task gave a significantly higher proportion of correct acceptances of object antecedents for reflexives for both L1 and L2 speakers of English. They concluded that the story task is superior when it comes to eliciting the non-preferred reading of an ambiguous sentence. In the picture task,

> [the informant's] first impression may have blocked future interpretations, much as the first viewing of an optical illusion may preclude us from seeing other interpretations of a figure. Truth-value story tasks provide a way of manipulating context to demonstrate the effect of pragmatics on judgments of acceptability. (Gass 2001:225)

Hence, this method helps determine the limits of ungrammaticality for L2 learners. Another advantage is that the informants are asked to evaluate the truth value of the sentence, not the structure itself. They do not have to invoke their meta-linguistic competence consciously.

3.3 Testing knowledge of Norwegian anaphors: some problems

The advantages of the truth-value judgment story task make it the most suitable and most commonly used task for testing anaphoric binding in L2. However, the task is not sufficient for testing the acquisition of Norwegian anaphors. Norwegian long-distance anaphors are different from long-distance anaphors in e.g. Chinese and Japanese. The anaphor *seg* can only be bound at a distance, as in (5), repeated as (13):

(13) Per$_i$ hørte Ola$_j$ snakke om   seg$_{i/*j}$.
      Per heard Ola talk.INF about SE
      'Per$_i$ heard Ola$_j$ talk about him$_{i/*j}$.'

In the Chinese sentence in (14), the long-distance, intermediate, and local antecedents (*Zhangsan*, *Lisi* and *Wangwu*) are all possible binders for the anaphor *ziji*.

(14) Zhangsan$_i$ renwei Lisi$_j$ zhidao Wangwu$_k$ xihuan ziji$_{i/j/k}$.
      Zhangsan thinks Lisi knows Wangwu like   SE
      'Zhangsan$_i$ thinks that Lisi$_j$ knows that Wangwu$_k$ likes SE$_{i/j/k}$.'

                                                          (Cole, Hermon & Sung 1990:1)

The fact that *seg* cannot be locally bound makes it different from long-distance anaphors in some other languages. This makes it problematic to use the truth-value judgment task for testing all relevant phenomena in L2 acquisition of Norwegian anaphoric binding. Three constructions cause problems for the truth-value judgment task. The first one is the long-distance binding of *seg* across a finite clause boundary. The second is the local binding of the long-distance anaphor *seg* if *seg* occurs in a finite subordinate clause. The third construction is long-distance binding of *seg* to a non-local object antecedent. When testing L2 acquisition of Norwegian anaphors, it is desirable to find out whether the informants allow the non-target-like long-distance binding to cross finite clause boundaries, as in (6), repeated here as (15).

(15) *Per_i hørte at Ola_j snakket om $seg_{*i/*j}$.
　　Per heard that Ola talked about SE
　　'Per_i heard that Ola_j talked about $him_{*i/*j}$.'

Since the long-distance anaphor cannot be bound outside the finite clause, *Per* is not a possible antecedent for *seg* in (15). Since the long-distance anaphor *seg* cannot be bound locally, *Ola* is not a possible antecedent either. Thus, (15) is ungrammatical for most Norwegian L1 speakers.[10] This makes it problematic to test long-distance binding of *seg* across a non-finite clause boundary like that in (15). Since *seg* cannot be bound locally, it is also problematic to test local binding of *seg* if *seg* occurs in a finite subordinate clause as in (15). The issue is the same; the entire sentence is ungrammatical. It is also problematic to test long-distance binding of *seg* to a non-local object antecedent, as in (16).

(16) *Per_i fortalte **Ola_j** at $lillebroren_k$　　beundrer **$seg_{*i/*j/*k}$**.
　　Per told　Ola that little.brother.the admires　SE
　　'Per_i told Ola_j that the little $brother_k$ admires $him_{*i/*j/*k}$.'

The issue is the same as in the other two constructions: *seg* cannot be bound to the local antecedent, and since the subordinate clause is finite, the main clause subject is not a possible binder either. Since the long-distance object is also not a possible antecedent, there is no grammatical reading of the sentence. The sentence is unacceptable, and thus the truth value is impossible to judge.

In the truth-value judgment task, the test sentences must be grammatical although the context forces a non-grammatical interpretation. If a sentence does not have any possible interpretation for L1 speakers, it is meaningless to use it to test L2 learners' competence. If an L2 learner has a native-like L2 grammar, the sentence will be impossible to judge because it is inherently ungrammatical; the truth-value judgment task makes no sense. Grammaticality is a prerequisite for truth value.

The truth-value judgment task is meant to elicit information about a speaker's competence without requiring the use of meta-linguistic knowledge. In this task, there is an unwritten contract between the researcher and the informant; the informant is

asked to evaluate the truth value of a sentence. Therefore, the informant expects the sentence to be grammatical, i.e. either true or false in a given context. It is unfair to ask the informant to evaluate an ungrammatical sentence since that sentence is neither true nor false. If one wants to include sentences like (15) or (16), which are ungrammatical in the target language, one has to tell the informant that some of the sentences may be ungrammatical and therefore untrue. Then the informant will have to consider both the truth value AND the grammaticality of the sentences. When the informant is forced to use her meta-linguistic knowledge, the task loses some of its value and appeal. Therefore, this task cannot be used for testing sentences that are inherently ungrammatical in the target language.

To my knowledge, this has not been a problem in research on L2 acquisition of Chinese, Korean and Japanese; in these languages, the long-distance anaphor can also be bound locally, i.e. there are two grammatical interpretations in the target language.[11]

In testing whether L2 speakers of English allow long-distance binding, the local interpretation of the anaphor will always give a grammatical result. There is always at least one grammatical interpretation of the sentence, despite the attempt to elicit an interpretation that is ungrammatical for native speakers of English. The story in (17) forces the long-distance reading. For native speakers of English, the sentence will be false according to the story because the only grammatical reading is the one where the anaphor refers to the local antecedent. The sentence itself is grammatical, despite the fact that the story forces the ungrammatical interpretation.

(17) A young boy was looking at one of Mr Robin's antique guns. The young boy
      accidentally pulled the trigger and the gun fired. Unfortunately, the bullet hit
      Mr. Robins in the arm.
      Mr. Robins realized that the boy shot himself accidentally.

                                                            (White et al. 1997:168)

When using truth-value judgment tasks to test L2 interpretations of anaphoric binding in languages like English and Chinese, (at least) one interpretation of the sentence is grammatical for L1 speakers. Therefore, the task can also be used to test anaphoric binding which is considered ungrammatical in the target language.

Thus, researchers are forced to make use of more than one test in investigating L2 learners' interpretation of Norwegian anaphors. What should this additional test be? The truth-value judgment task is considered the most valid task for investigations into anaphoric binding, but it seems necessary to complement with another method. I will now consider additional methods. As mentioned in Section 3, grammaticality judgments are not sufficient for investigating reflexive binding; they may elicit preference, not competence. Hirakawa (1990) used a version of the multiple-choice task to test anaphoric L2 binding. The experiment was designed as in (18), and the informants were asked to pick the antecedent(s) for the anaphor.

(18) Tom showed Bill a picture of **himself**.
      Tom
      Bill
      Either Tom or Bill
      Someone else _____
      Don't know   (Hirakawa 1990:70)

The problem with this method is that 'it provides information only about what *can* be a possible antecedent of [*himself*], but not what *cannot* be a possible antecedent' (Gass 2001:224). We only get information about the informant's preference. In addition, if the informant has a strong preference for one interpretation, he or she may not consider the other possibilities. As Gass (2001:224) points out, with this multiple-choice method 'one is left not knowing what non-response means. Does it mean that the learner did not consider all possibilities or that she did consider all possibilities and that the sentences that were not selected are ungrammatical for that learner?' The fact that a learner selects only one interpretation does not necessarily mean that the other ones are excluded from her grammar.

Thomas (1991:224f.) emphasizes that, when a language makes more than one NP 'syntactically eligible to bind a reflexive, speakers habitually prefer one possible antecedent over the other(s)'. Such a preference can cloud the speaker's perception of any underlying ambiguity. A study of L1 speakers of English shows that 81% consistently bind the anaphor to the subject of the sentence despite the fact that the grammar of English also allows non-subject antecedents (Read & Chou Hare 1979:110). In this sense, preference may obscure competence because the informants believe that they are evaluating the grammaticality of the sentence, when in fact they are reporting their preferences. This may lead us to conclude that L1 speakers of English only allow subject antecedents in sentences like (19).

(19) Mary$_i$ told Susan$_j$ about herself$_{i/j}$.

As Thomas (1995:217) points out, '[i]t seems premature to conclude on the basis of these results that L2 learners lack access to UG, especially since to do so would also imply that native speakers' grammars are similarly not constrained by UG'. The truth-value judgment task circumvents these problems, but, as discussed above, it is necessary to use at least one additional method for testing certain aspects of anaphoric binding in Norwegian L2. It is always desirable to use more than one method to test for the same phenomenon. Triangulation is advantageous because 'performance effects are likely to be different for different tasks, while knowledge should remain constant across tasks' (Klein & Martohardjono 1999:16). White et al. (1997:146) also point out the risk of using only one method: '[C]ertain tasks can lead to an underestimation of learner's L2 competence and ... one must be cautious in making assumptions about the nature of the interlanguage grammar on the basis of single tasks'.

In the study reported in Busterud (2006), I investigated L2 acquisition of Norwegian anaphors, and tried to force the informants to produce long-distance anaphors using a written 'fill in' task like the one in (20).

(20) a. Jon tror at Maria elsker _____ (Maria).
    'Jon thinks that Maria loves _____ (Maria).'
  b. Morten var klar over at Hans hadde snakket om _____ (Morten).
  b. 'Morten knew that Hans had been taking about _____ (Morten).'

(Busterud 2006:125)

A word is missing in the sentences, and the name in parenthesis indicates the referent of the missing word. The informants were asked to fill in the missing word(s). In (20a), the natural resopnse is the local anaphor *seg selv*, and in (20b) the pronominal *han* is the most suitable response. Using this 'fill in' task, I wanted to see whether the L2 learners would produce the anaphor *seg* in sentences where the long-distance binding crossed a finite clause boundary. Some Norwegian dialects allow long-distance binding of *seg* across a finite clause, despite the fact that this is ungrammatical in written language (this is discussed in Section 4 below). In these dialects pronominals and long-distance anaphors are not in complementary distribution. The informants tended to fill in a pronominal in the sentences displaying long-distance binding. Since long-distance binding of simple anaphors is an option allowed by UG, a test like this will only indicate the informant's preference, not her syntactic judgment. This only tells us that the informant allows pronominals in this context, not whether anaphors are excluded or not. The same issue occurs if one tries to use this type of task for testing long-distance binding across non-finite subordinate clauses. My findings in Busterud (2006) indicate that the informants may avoid producing the *seg* anaphor in contexts where a pronominal might give the same interpretation. For Norwegian long-distance binding, it seems necessary to force the informants explicitly to evaluate the relevant structure.
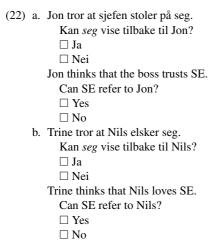
A test such as the one illustrated in (21), proposed by Gass (2001:226), makes it easier to determine the limits of grammaticality for L2 learners.

(21) John said that Bill saw himself in the mirror.
    a. Himself cannot be John. agree disagree
    b. Himself cannot be Bill.   agree disagree

The problem with this task is that the informant has to evaluate both antecedent possibilities at the same time. This may force her to measure the two possibilities against each other, which may again elicit preferences rather than competence.

Asking the informant to evaluate one interpretation at a time will probably give more reliable data. The informant would not have to compare the two interpretations by evaluating them simultaneously and is less likely to remember that she is judging THE SAME TYPE OF SENTENCE STRUCTURE. This type of interpretation judgment task

is illustrated in (22) (from my ongoing project on L2 acquisition of Norwegian anaphora).

(22) a. Jon tror at sjefen stoler på seg.
>   Kan *seg* vise tilbake til Jon?
>   ☐ Ja
>   ☐ Nei
>
> Jon thinks that the boss trusts SE.
>   Can SE refer to Jon?
>   ☐ Yes
>   ☐ No
>
> b. Trine tror at Nils elsker seg.
>   Kan *seg* vise tilbake til Nils?
>   ☐ Ja
>   ☐ Nei
>
> Trine thinks that Nils loves SE.
>   Can SE refer to Nils?
>   ☐ Yes
>   ☐ No

The sentences in (22a) and (22b) test whether the anaphor *seg* can be bound to an antecedent outside the finite subordinate clause (a) and to an antecedent within the finite subordinate clause (b). Some properties of sentences, such as certain aspects of verbs or NPs, may influence the judgments. Thus, it is necessary to test the same construction more than once, using different verbs and NPs.

In this task, the informants are asked to evaluate whether a specific interpretation is acceptable or not. The use of ungrammatical sentences is not problematic here, unlike in the truth-value judgment task, since the learner is asked to evaluate one interpretation of the anaphor, not the grammaticality of the entire sentence. In the truth-value judgment task, the grammaticality of sentences is a prerequisite, since the informants are asked to judge the truth value, and not the grammaticality of the sentence per se. Thus, there must be one true, i.e. grammatical interpretation of the sentence. This is not the case with the interpretation judgment task. In the interpretation judgment task, the informants are explicitly asked to evaluate one specific interpretation. The interpretation judgment requires the use of meta-linguistic knowledge, and thus this task is a kind of acceptability judgment task. There is no contract between the researcher and the informant that the sentences in this elicitation task must be grammatical. For the ungrammatical sentences, the only element which makes them ungrammatical is the use of the anaphor, which is exactly what they are asked to interpret. Therefore, it is possible to use this test for constructions impossible to test with the truth-value judgment task. Testing ungrammatical sentences which are potentially ambiguous is problematic, since many tasks require sentences with at least one grammatical interpretation. As far as I can see, the interpretation

judgment task is the best proposal for testing ungrammatical anaphoric sentences in Norwegian.

In my ongoing experiment, I have so far investigated 15 Chinese L2 speakers of Norwegian. My preliminary results indicate that the L2 learners are treating local binding of *seg selv* equally in the truth-value judgment task and in the interpretation judgment task. The truth-value judgment task is widely assumed to be a valid task. The fact that the L2 speakers treat this construction in the same way in both tasks is an indication that the interpretation task is also valid: '[C]onverging evidence across tasks supports validity' (Flynn & Foley 2009:32, referring to Lust, Flynn & Chien 1987:274).

Investigating binding of local and non-local anaphors in Norwegian L2 by means of a combination of the test in (22) and the truth-value judgment task seems to be preferable. In the truth-value judgment task, the informant will not have to use her meta-linguistic knowledge. The interpretation judgment task in (22) will complement and test the binding relations which are impossible to test with the truth-value judgment task. This triangulation of methods makes it possible to test all relevant structures and also determine whether the informant's responses are coherent across tasks.

4. DIALECTAL VARIATION

In this section, I take a closer look at some dialectal phenomena relevant to investigations of anaphoric binding in L2 acquisition of Norwegian. First, I explain the dialect situation in Norway and the difference between written and spoken Norwegian, focusing on long-distance binding in different dialects and the variation in the binding domain of the long-distance anaphor *seg*. Then, I discuss the methodological implications for the investigation of L2 acquisition of Norwegian.

4.1 The use of dialect and written language

In Norway, there are two different written standards, but no official standard spoken variety. Speakers usually use their dialect in most situations (on TV, at the university, etc.). Vikør (1989:41) describes the situation in the following way:

> There are two written standards, *bokmål* and *nynorsk*. Both are based on Norwegian speech, both have a speech standard attached to them, both claim validity as national and official linguistic norms within the Norwegian speech community. Still, they differ markedly from each other with regard to their history, their status, and their function in present-day Norway. Moreover, they are not universally adopted as norms, certainly not in speech. Most Norwegians speak their own dialects, in a more or less modified form, even outside the local sphere and in formal situations.

Most Norwegians use bokmål as their written language. None of the spoken dialects are identical to either of the written varieties. The dialects in the capital Oslo and the eastern parts of Norway are closest to bokmål. The dialects in the other parts of the country may be quite different from this written variety. The written variety nynorsk is considered more closely connected to many of the dialects in western Norway.

In Norwegian language courses, most L2 speakers learn to read and write bokmål and to speak a spoken language similar to the written variety bokmål. Thus, their written and spoken languages are similar. 'Teachers of Norwegian as a second language regardless of dialectal background usually replace their dialect with Bokmål when teaching adults. This is done to accommodate to the written material' (Husby 2008:12). Many L2 speakers have reported that it is difficult to understand Norwegian dialects because they differ significantly from what is taught in Norwegian language courses. This does not mean that they do not get any input in dialect and nynorsk. Bokmål and nynorsk are officially equal by law. In the Norwegian Broadcasting System, 'at least 25% of the verbal component in TV and radio must be in nynorsk' (http://www.sprakradet.no/politikk-fakta/spraakpolitikk/nrk/, my translation).[12] Also, all official information must be written in both nynorsk and bokmål. Thus the L2 input is a combination of bokmål, nynorsk and the local dialect. The informant cannot ignore any of the varieties (bokmål, nynorsk and dialect), as may be an option in other countries. This is confirmed by Husby (2008:12):

> Norwegians generally do not adjust their way of speaking to the written varieties of Norwegian: Bokmål and Nynorsk. In conversations between first language speakers, everyone sticks to their dialect. The same is valid for first language users in conversations with second language users of Norwegian: The Norwegian mainly keeps the dialect forms, while the second language user speaks what is learnt in class, and this variety is understood by the Norwegian. . . . the Norwegians do not adjust their way of speaking to accommodate to the foreigners' second language competence.

4.2 Dialectal variation and long-distance binding

The dialectal variation also affects acceptance of long-distance binding. As mentioned earlier, the long-distance anaphor can always be replaced by a pronominal without changing the interpretation, as in (23a) and (23b).[13]

(23) a. Peter$_i$ ba   John$_j$ om   å hjelpe seg$_{i/*j}$.
       Peter$_i$ asked John$_j$ about to help   SE$_{i/*j}$
       'Peter$_i$ asked John$_j$ to help him$_{i/*j}$.'
   b. Peter$_i$ ba   John$_j$ om   å hjelpe ham$_{i/*j}$.
       Peter$_i$ asked John$_j$ about to help   him$_{i/*j}$
       'Peter$_i$ asked John$_j$ to help him$_{i/*j}$.'

This means that speakers can always choose not to use the long-distance anaphor and use a pronominal instead. This does not mean that long-distance anaphors are not used. Long-distance anaphors (as well as local ones) are widespread in all varieties of Norwegian, even in the dialects close to bokmål. In some dialects, long-distance binding is accepted and used quite frequently. Moshagen & Trosterud (1990:51) point out that '[a]lthough NCBR [non-clause-bounded reflexives] has decreased the last hundred years, it still is a part of the grammar of many Norwegian dialects'. In the areas of Trøndelag and Hedmark, long-distance binding of *seg* is frequently used and accepted (Strahan 2003), while in Sørlandet, in the South, long-distance binding of *seg* is less frequent. For an L2 learner, the input of long-distance binding may vary by area.

Norwegian long-distance binding is usually described as binding that cannot cross a finite clause boundary: 'The overall pattern of Norwegian is clearly that long-distance binding of reflexives out of a non-finite clause is far preferable to long-distance binding out of a finite clause' (Strahan 2003:83). Some dialects do, however, allow long-distance binding of *seg* across a finite clause boundary. This is the situation in TRøNDERSK, the dialect used in the Trøndelag area. In (24), from the Trøndersk dialect, the anaphor *sæ* (dialectal pronunciation of *seg*) is bound to an antecedent outside the finite subordinate clause.[14]

(24) a. Han$_i$ trudd   at   dæm$_j$ kom te å flir   åt sæ$_{i/*j}$.
        he   believed that they came to to laugh at SE
        'He$_i$ believed that they$_j$ were going to laugh at him$_{i/*j}$.'

   b. Han$_i$ va   redd   at   dæm$_j$ skoill flir   åt sæ$_{i/*j}$.
        he   was afraid that they should laugh at SE
        'He$_i$ was afraid that they$_j$ should laugh at him$_{i/*j}$.'

   c. Hu$_i$ syns   de va   rart   at   dæm$_j$ seta   sæ$_{i/*j}$ så my.
        she thinks it was strange that they visited SE   so much
        'She$_i$ thinks it was strange that they$_j$ visited her$_{i/*j}$ so much.'

                                                (Moshagen & Trosterud 1990:48f.)

In some cases, there are significant differences between the written varieties and the dialects, both in pronunciation and in syntax.[15] This may also affect the acceptability of anaphoric binding. My experience is that most native speakers of Norwegian find it easier to accept long-distance binding in a sentence if it is uttered in a dialect, as in (24a–c). This is especially true in sentences with long-distance binding across a finite clause boundary. Such sentences are ungrammatical in the written varieties, but grammatical in many dialects. This is reflected in the fact that long-distance anaphoric binding is more frequent in spoken than written language and more frequent in dialectal usage than in written bokmål. The fact that the long-distance anaphor *seg* can always be replaced by the pronominal *han/henne* may also be relevant. In written language, most native speakers of Norwegian tend to use a pronominal instead of a long-distance anaphor; since the binding domain for *seg* differs across dialects, pronominals are the 'safe' way to go.

Strahan (2003:66–71) found that sociological factors such as gender, education and age affect the acceptance of long-distance binding. Older people tend to accept long-distance binding more than young people, men more than women, and people with low level of education more than highly educated ones. Strahan (2003:65f.) also points out that long-distance binding is used and accepted more frequently in rural areas.[16]

4.3 Implications for L2 research on binding

What implications do these concepts have for the investigation of L2 anaphoric binding? Firstly, it is important to obtain precise information about the learners' L2 input. Do learners have input from one or more dialects? What is the acceptability of anaphoric binding in the input dialect(s)? If an L2 learner is influenced by Trøndersk, for instance, where long-distance binding across a finite clause boundary is accepted, this may influence her L2 grammar on anaphoric binding.[17] If, as a result, the L2 learner allows long-distance binding to cross a finite clausee boundary, it may be wrong to conclude that her parameter value for the binding domain is different from that of Norwegian L1 speakers. Long-distance binding across a finite subordinate clause is almost non-existent in written Norwegian, but if an L2 learner encounters a lot of this type of long-distance binding in her spoken input and internalizes it, her L2 competence cannot be said to be in conflict with the Norwegian settings for anaphoric binding.

As mentioned above, long-distance binding varies according to dialect and age. The examples in (24) above show long-distance binding of *seg* across a finite subordinate clause. If it is easier for native speakers of Norwegian to accept long-distance binding in a sentence uttered in a dialect, it might be a good idea to use dialect sentences in the test. However, this may not be appropriate when testing anaphoric binding. Firstly, it is often necessary to use long and complex sentences with subordination when testing long-distance binding in L2 acquisition. It might be difficult for informants to process and remember such long sentences unless they are also provided in written form, especially if they are uttered in a dialect they are not familiar with. Another problem is that sentences uttered in dialect are often very different from the same sentences in bokmål. To make the sentence closer to the dialectal variant, it could be written the way it is spoken. There are, however, big differences lexically and syntactically between a sentence written in a dialect and a sentence written in bokmål, as illustrated in (25) and (26).[18] The (a) versions are written in dialect, the (b) versions in bokmål. The (b) versions are marked as ungrammatical since they are ungrammatical in written bokmål.

(25) a. Han_i trudd at $dæm_j$ kom te å flir åt $sæ_{i/*j}$.
     b. *Han_i trodde at de_j kom til å le av $seg_{i/*j}$.
       'He_i believed that $they_j$ were going to laugh at $him_{i/*j}$.'

(26) a. Hu$_i$ syns de va rart at dæm$_j$ seta sæ$_{i/*j}$ så my.
   b. *Hun$_i$ syntes det var rart at de$_j$ besøkte seg$_{i/*j}$ så mye.
      'She$_i$ thinks it was strange that they$_j$ visited her$_{i/*j}$ so much.'

Since L2 speakers learn to read and write bokmål, it might be difficult for them to read sentences written in a dialect. Therefore, this is not a good option when testing L2 acquisition. This does not imply, however, that dialectal input does not influence the competence of an L2 learner. To control for dialectal influence, one needs information about the L2 speaker's input. This also has consequences for the choice of control group. When testing L2 speakers in the Trøndelag area who are getting a lot of input from the Trøndersk dialect, it is important to have speakers from Trøndelag in the L1 control group. Since L2 learners usually learn to speak a variety of Norwegian that is close to bokmål, it is moreover necessary to include speakers of the dialects closest to bokmål in the control group. Despite the fact that dialects are widely used in Norway, the dialects closest to bokmål are dominant on TV. L2 speakers will necessarily get spoken input in varieties close to bokmål as well as in dialects. They will also get written input in both nynorsk and bokmål. To make the control group representative, it is necessary to include speakers of both the dialects close to bokmål and the other dialects the informants are exposed to.

Because of dialectal variation, it is necessary to have more than two options in the interpretation judgment task proposed in (22). There is likely to be variation among Norwegians with respect to acceptability of long-distance binding across non-finite and finite subordinate clause boundaries. Some Norwegians may find some of the sentences a bit unnatural, but not entirely impossible. This is especially relevant since the sentences are printed in the written standard bokmål rather than being, for example, spoken in a certain dialect. Sollid (2005) argues that for many people written language has more authority than spoken language. This may influence the judgments of some informants. On the other hand, Norwegians have comprehensive receptive competence for various dialects, including dialects they do not speak themselves, which might cause certain informants to be inclined to accept non-standard options. Variation is thus to be expected, even in the control group.

To accommodate this possible range of variation, it might be better to provide the Norwegian group with two additional options: sentences that are not completely unnatural and sentences that are not completely natural. In the revised version of the interpretation judgment task, I suggest four alternatives, as shown in (27).

(27) a. Jon tror at sjefen stoler på seg.
      Kan *seg* vise tilbake til Jon?
      ☐ Naturlig
      ☐ Ganske naturlig
      ☐ Ganske unaturlig
      ☐ Unaturlig

b. Jon thinks that the boss trusts SE.
Can SE refer to Jon?
☐ Natural
☐ Fairly natural
☐ Fairly unnatural
☐ Unnatural

Since it seems necessary to provide four options for the Norwegian control group, the same options should be provided to the L2 learners. Providing the informants with four options may make it harder to interpret the results. However, my preliminary results indicate that the L2 learners in my study tend to use the alternatives on the outer edges; NATURAL and UNNATURAL. As mentioned earlier, a combination of the truth-value judgment task and the revised version of the interpretation judgment task in (27) seems to be the most exhaustive method for investigation of L2 learners' competence of Norwegian anaphoric binding.

The acceptance and use of long-distance anaphors in Norwegian varies significantly depending on dialectal and social factors. There is also a difference between written and oral varieties. These factors have implications for the methodology used for testing L2 acquisition of Norwegian anaphors. This special language situation also makes it necessary to include more exact information about the learner's L2 input.

5. CONCLUDING REMARKS

This paper has discussed some methodological problems I have encountered in the preparation of a real experiment investigating L2 acquisition of Norwegian anaphors. The truth-value judgment task, widely considered the best method for eliciting L2 speaker competence of anaphoric binding, is not sufficient for testing all relevant constructions in Norwegian. Investigations of L2 anaphoric binding in Norwegian require the use of other methods as well. The special language situation and dialect variation make it crucial to consider the L2 speakers' input because acceptance of long-distance binding varies across geographical areas and dialects. I consider the interpretation judgment task in (27) the most suitable task to complement the truth-value judgment task in testing Norwegian L2. It is important to work through fundamental questions, like the ones discussed in this paper, in the inception of a research project. Such methodological issues are critical to my ongoing and future work on L2 acquisition of anaphora. It is essential to eliminate, as much as possible, potential methodological sources of error in advance of the data collection.

The anaphor construction itself is challenging for investigators. It is a subtle construction, and even among native speakers of Norwegian, it might not be clear which anaphoric constructions are considered grammatical. Dialect, age, education

and gender are among the factors that influence interpretation. When variation and inaccurate responses are expected in the judgments of native speakers, it is likely that the same will happen in the L2 group. To obtain valid data when investigating L2 acquisition, the nature of input must be scrutinized. The choice of methodology is no less important.

ACKNOWLEDGEMENTS

NOTES

1. My empirical experience is based on the knowledge acquired during my work on my Master's thesis (Busterud 2006). That project was small and at a lower academic level. I will therefore not include the data from it. However, that study gave me new insights into methodological problems related to the study of L2 acquisition of Norwegian anaphors and constitutes the basis for my ongoing Ph.D. project.
2. Lødrup (2008) reports examples of object-bound reflexives in Norwegian. Most of them are object binding of the possessive reflexive *sin/sitt/sine*.
3. Much research has focused on binding domains. Wexler & Manzini (1987) proposed a specific parameter – Governing Category Parameter – for defining binding domains. The parameter values represented different parameter settings for binding domains. Much of the early research on anaphoric binding in L2 used Wexler & Manzini's (1987) framework and investigated to what extent L2 learners could reset parameter values that differed in the L1 and L2. Another well-known theory of anaphoric binding is proposed by Reinhart & Reuland (1993). According to them, binding is about reflexivity. They distinguish between SELF anaphors and SE anaphors. SELF anaphors can reflexive-mark their predicate, but SE anaphors do not have this property. I will not discuss this theory here since this paper focuses on methodology, not binding theories.
4. Some call this 'medium-distance binding'. This will be discussed later.
5. Finer & Broselow (1986) first reported the tendency of L2 learners of English to violate the locality requirement (Binding principle A) for the reflexive *himself/herself* more often when it appeared in a non-finite subordinate clause than in a finite subordinate clause. This tendency has been confirmed by many later studies (Hirakawa 1990; Broselow & Finer 1991; Finer 1991; Thomas 1991; Matsumura 1994; Wakabayashi 1996; White et al. 1997; Akiyama 2002; Cho 2006; Watanabe et al. 2008). Some researchers have interpreted these findings as UG accessibility, since the L2 learners treated the binding differently from the conditions in the L1 and L2. They concluded that the L2 learners had acquired different values for Wexler & Manzini's (1987) Government Category Parameter compared to the L1 and L2. The Norwegian binding system resembles this parameter value; *seg selv* can only be bound locally, while long-distance *seg* can be bound to a long-distance antecedent within the minimal finite domain.
6. Chinese also has a morphologically complex anaphor, *taziji*. This anaphor must be locally bound, like Norwegian *seg selv* and English *himself*. There is an ongoing discussion as to

whether finiteness is morphologically expressed in Chinese. According to Hu, Pan & Xu (2001), it is not.

7. Reuland & Everaert (2001:652) emphasize this as one crucial difference between local binding and medium-distance binding, i.e. long-distance binding where the binding cannot cross a finite clause boundary. Anaphors and pronominals are in complementary distribution in local binding, but not in medium-distance binding.

8. I have searched the ASK corpus, compiled by the Aksis group at the University of Bergen (http://decentius.hit.uib.no/corpus/asktest.xml) and the L2 texts on Olaf Husby's homepage (http://www.hf.ntnu.no/anv/hjemmesiderifas/Olafstoff/DIV/NO2tekst1base/Oversikt.html).

9. In Finer & Broselow's (1986) study of L2 acquisition, the informants' anaphor binding system differed from both the L1 and the L2. Finer (1991) suggested that the informants had reset their parameter value on Wexler & Manzini's (1987) Government Category Parameter to a value different from both L1 and L2. Finer concluded that the interlanguage grammar was governed by UG since the value was an option allowed by UG. See also note 5.

10. Dialectal differences in Norway are discussed in Section 4.

11. According to Kim et al. (2009:10f.), the Korean morphologically simple anaphor *caki* prefers a long-distance antecedent.

12. The Norwegian Broadcasting System (NRK) is owned by the Norwegian state. These rules apply only to NRK, not other, private broadcasting companies. The original, Norwegian quotation is: 'Minst 25 prosent av verbalinnslagene i radio og fjernsyn skal være på nynorsk'.

13. In (23b) the pronominal can also have deictic reference.

14. Examples (24a, b) are from Smøla, while (24c) is from Nord-Trøndelag. Arnold Dalen (p.c.) confirms that (24c) is from spontaneous production. This is probably also true of (24a, b).

15. One example of syntactic difference is the construction of main clause *wh*-questions. In most dialects, and in both written norms, main clause *wh*-questions are V2, as in (i); sometimes, the dialects allow V3, as in (ii), from the Trøndersk dialect:
    (i) Hva spiser du?
       what eat   you
    (ii) Ka   du et?
       what you eat
       'What are you eating?'

16. Strahan (2003) investigated the acceptability of long-distance reflexives among L1 speakers of Norwegian. She used a grammaticality judgment task (180 speakers) and an elicitation exercise (27 speakers).

17. Relevant here the distinction between INPUT and INTAKE. An L2 learner may encounter a lot of long-distance binding in her input without internalizing it as part of her L2 grammar. Maybe the L2 learner has to be an advanced speaker to make input of long-distance binding part of her L2 grammar.

18. Norwegians often use their dialect when writing in social media such as Facebook (Isdahl 2009) and when chatting and writing text messages.

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