Irreversible binding in Dutch

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In a model of syntax where the derivation proceeds in phases, LF accesses the derivation each time a phase is completed; specifically, LF accesses the domain of the completed phase. I propose (following McGinnis 2009) that binding relationships are established irreversibly when LF accesses the derivation. This correctly predicts the interactions between moving and binding found in Dutch double-object constructions. In contrast, earlier analyses that evaluate a binding dependency based on the relationship between a moved argument and its trace are less successful in predicting the Dutch data.

Keywords: Dutch; syntax; binding; phases; scrambling

1 Introduction

In this paper, I argue that binding relationships are irreversibly established in Dutch when LF accesses the derivation (following McGinnis, 2009). Within a model of phase-based derivation, the syntax is built from bottom up in stages or phases, units relating to the propositional structure of the utterance. When a phase is complete, the domain of the phase (the complement of the phase head) is transferred to the interfaces with the semantic and phonological components of the grammar (sent to Spell Out). The consequence of this transfer is that relationships established in the domain of the phase cannot be altered by further syntactic operations.

In this model, binding dependencies are evaluated according to the configuration of the coindexed DPs at the completion of a phase. That is, further syntactic operations cannot alter a binding dependency established when LF accesses the derivation, and the binding dependency does not refer to stages in the derivation prior to the configuration at Spell-Out (cf. McGinnis, 2004). This approach contrasts with earlier formulations of the restrictions on movement and binding that refer to representational dependencies established between arguments and their traces (e.g. Rizzi, 1986; McGinnis, 2004).

The data from this paper represents the judgments of seven native Dutch speakers. In some cases, there is variation between speakers with regards to grammaticality judgments. Where there are differing judgments between speakers, I either discuss this in the text or acknowledge this in a footnote.

The next section of this paper briefly outlines crucial aspects of the analysis and presents the main claims. In Section 3, I propose a detailed account of Dutch double-object passives, since key data involve movement and binding
interactions in these constructions. Finally, in Section 4, I present evidence that Irreversible Binding takes place in Dutch double-object constructions and discusses how Irreversible Binding departs from previous approaches to correctly predict the binding patterns found in Dutch.

2 Irreversible Binding in Dutch

A Dutch DP can bind into a DP it A-moves over, but cannot necessarily bind the DP itself. Passives of Dutch double-object constructions illustrate this contrast; the direct object (DO) must become subject of a passive clause, moving over the indirect object (IO). When the direct object (DO) is a quantified expression that becomes subject of the passive clause, it can bind a possessive pronoun within the indirect object DP. However, my consultants do not allow the DO to bind the IO itself, regardless of whether the IO is in its base position or scrambled to the left of an adverb (1b-c).1

(1) a. Iedere hond, werd zijn, baasje toegewezen.2
   every dog was his owner assigned
   ‘Every dog was assigned to his owner.’

   b. * Jan was/werd waarschijnlijk zichzelf getoond
      Jan was probably himself shown
      ‘Jan was probably shown to himself.’

   c. * Jan was/werd zichzelf waarschijnlijk getoond.
      Jan was himself probably shown

McGinnis (2009) observes parallel contrasts in Albanian, Georgian, Tagalog and Japanese. To account for this set of facts, she proposes the following binding principle:

Irreversible Binding: A binding dependency between two DPs is established as soon as possible at a phase edge and cannot be reversed (McGinnis, 2009, p. 3).

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1 This construction is reported to be grammatical in McGinnis 2004, 2009 and speaker 5 found this construction less marked than the other speakers, so long as the verb was focused. See section 4.2 for further discussion.
2 Speaker 1 prefers this example with a prepositional goal. This holds also in the active:
   i) a. Ik schreef aan iedere auteur zijn eigen boek toe.
      I assigned to every author his own book
      ‘I assigned every book to its author.’
      b. Ik toonde aan iedere auteur zijn eigen boek.
         I showed to every author his own book
         ‘I showed every author his own book.’
   It is unclear why this is the case. This speaker judged other double object sentences grammatical without a PP Goal.
   ii) Gisteren gaf hij zijn vriend een boek.
      yesterday gave he his friend a book
In this paper, I operationalize phase edge as the point in the derivation where the phase head (e.g. v) projects its root node (e.g. vP).

With this binding principle, we can straightforwardly account for the grammaticality contrasts in (1). In (1b-c), the IO anaphor zichzelf in c-commands the DO Jan when the vP phase edge is reached. This is schematized in (2a) where the IO has moved (scrambled) to spec-vP occupying the phase edge (as in (1c)).

At this point, a binding dependency is established between the IO and the DO. Since the IO is an anaphor and the DO is an R-expression in (1b-c), this results in a principle C violation. Later movement of the DO to check EPP and Case in spec-TP cannot reverse the binding dependency. In contrast, (1a) is grammatical because the possessive pronoun contained within the IO does not c-command the DO, so no binding dependency is established until after the DO has moved over the IO to subject position. This is schematized in (2b); no binding dependency is established in the vP phase and the DO c-commands the possessive pronoun within the IO when the CP phase is complete.

(2) a.

3 Dutch passives

In this section, I propose a specific derivation for Dutch double-object passives, linking interactions between scrambling and passivization to the apparent violation of locality caused by the DO moving to subject position over the IO. My analysis builds directly on Anagnostopoulou’s (2003) claim that scrambling the IO and DO into multiple specifiers of the same functional head makes both objects being equidistant to higher probes, allowing the DO to move over the IO to check Case and the EPP feature of T without violating locality.

As noted, the direct object becomes the subject of Dutch double-object passives. Treating the indirect object as subject results in ungrammaticality.

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3 See section 3 for arguments that the IO and DO must scramble to spec-vP in double-object passives.
4 (1b) is also ungrammatical because the IO has not scrambled.
5 One of my consultants allows the indirect object to passivize, contrary to what has been reported in the literature; this speaker likely shows English influence (English has IO passives), having spoken primarily English for many years, although Dutch is his native language.
a. De boeken waren/werden haar/de student gisteren gegeven
   the books became-PL her/the student yesterday given
   ‘The books were given to the student yesterday.’

b. * De student was/werd de boeken gisteren gegeven.6
   the student became the books yesterday given
   ‘The student was given the books yesterday.’

At first glance, this movement of the DO appears to violate locality, since the IO asymmetrically c-commands the DO in active clauses, as shown by the contrast in (4). In (4a) the IO quantified expression can bind the possessive pronoun within the DO. In (4b) the DO quantified expression cannot bind the possessive pronoun within the IO.

(4) a. Ik toonde iedere i auteur zijn i boek.
   I showed every author his book
   ‘I showed every author his book.’

b. *Ik gaf zijn i auteur ieder boek i.
   ‘I gave its i author every book i.
   (Intended: I gave every book i to its i author.)

However, the IO does not remain in situ when the DO becomes subject of a passive (den Dikken, 1995; Broekhuis & den Dikken, 2012; Broekhuis, 2008). This is shown in the contrast between (5a) and (5b). In (5a), the IO has scrambled

6 This example leaves open the possibility that the IO is a ‘quirky’ subject that cannot trigger verbal agreement, as with dative subjects in Icelandic (e.g. Andrews 1981; Marantz 1984; McGinnis 1998). In Dutch, a dative pronoun can occur preceding the verb when the verb agrees with the DO; however, data from several of my consultants indicates that the dative pronoun does not occupy subject position. For instance, the expletive ‘er’ can occur with indefinite subjects, but not definite subjects (ia-b). While the expletive is grammatical when the DO is indefinite and the IO is definite, the expletive is ungrammatical when the DO is definite and the IO is indefinite (iia-b). Moreover, while two conjoined verb phrases can take a single external argument, the construction is degraded when the preverbal argument is a dative pronoun (iiia-b).

i) a. Er was een verkoopster in de winkel.
   ‘There was a saleslady in the store.’
   b. *Er was de verkoopster in de winkel.
   ‘There was the saleslady in the store.’

ii) a. Er werden haar boeken gegeven.
   ‘There were her books given.’
   b. * Er werden de boeken gegeven.
   ‘There were the books given.’

iii) a. Hij gaf haar de boeken en stuurde hem de fotos toe.
   ‘He gave her the books and sent him the photos.’
   b. *Haar werden de boeken gegeven en de fotos toegestuurd.
   ‘Her were the books given and the photos sent.’

Speaker 5 does not have contrasting judgments on the examples in (ii) and (iii); if this indicates that this speaker allows dative subjects for passive clauses, this may explain why this speaker finds (1) less marked than the other speakers.
to the left of the adverb *waarschijnlijk*, while in (5b) the IO remains *in situ* to the right of the adverb and the sentence is degraded.\(^7\)

(5) a. De boeken waren {haar/de student *waarschijnlijk* gegeven.  
the books were {her/the student *probably* given  
‘The books were probably given to the student.’

b. ??* De boeken waren *waarschijnlijk* de student gegeven.  
the books were *probably* the student given

This case of obligatory IO scrambling is somewhat surprising, since scrambling is generally a discourse-related phenomenon, motivated by the information structure of the clause. Scrambling moves ‘given’ material leftwards, leaving ‘new’ information *in situ* (e.g. Broekhuis & den Dikken, 2012; Neeleman & Van De Koot, 2008). However, regardless of information structure, scrambling of the IO necessarily accompanies movement of the DO to subject position in a passive.\(^8\)

(9)

I propose that the IO has structural Case and scrambles to the edge of vP, checking Case. After checking Case, the IO is inactive for further movement operations (Chomsky, 2000 and 2001). The DO next scrambles, tucking in to a

\(^7\) For speaker 5 this example is marked, but not completely ungrammatical, regardless of whether the IO DP appears to the right or left of the adverb. The only fully felicitous example has the IO as a pronoun scrambled to the left of the adverb. Speaker 6 also prefers the IO to be a pronoun.

\(^8\) The IO must also scramble when the DO scrambles, topicalizes, and undergoes *wh*-movement (Broekhuis & den Dikken, 2012, pp. 1072-1073).
lower specifier of vP (by hypothesis checking an EPP feature), but does not check Case in spec-vP. The IO and DO then occupy multiple specifiers of the same head; I adopt the assumption that multiple specifiers of the same head are equidistant to a higher probe (e.g. Chomsky 1995, 2000; Anagnostopoulou 2003). Once the IO and DO are equidistant to T, the DO can move over the inactive IO to check EPP on T and receive nominative Case (following Anagnostopoulou, 2003, p. 218). (9) illustrates the proposed derivation.

4 Irreversible Binding in Dutch

In this section, I argue that interactions between movement and binding in Dutch provide evidence for the principle of Irreversible Binding. I first discuss data from the majority of speakers (group 1), whose variety of Dutch gives direct evidence for Irreversible Binding (section 4.1). In Section 4.2, I discuss treatment of the zichzelf anaphor by my other consultants (group 2) and also address judgments reported in McGinnis (2004 and 2009). Section 4.3 compares Irreversible Binding to previous accounts of movement and binding.

4.1 Evidence for Irreversible Binding in Dutch

The speakers in Group 1 do not accept binding of the IO by the DO in a passive (1b-c), but do allow the DO to bind an anaphor in a goal PP (10a). For these speakers, an IO can also bind a DO anaphor in an active clause (10b). In both cases, grammatical binding dependencies are formed when the antecedent c-commands the anaphor when the root node of the vP phase is projected.

(10) a. Jani werd waarschijnlijk aan zichzelfi getoond.
   ‘Jan was probably shown to himself.’

   b. Jan heeft Mariei waarschijnlijk zichzelfi getoond.
   ‘Jan probably showed Mary to herself.’

I therefore propose that passive vP, although a ‘weak phase’ (Chomsky, 2001), constitutes a domain for binding.

When the IO is an anaphor and the DO is an R-expression, as in (1b-c), an ungrammatical dependency is established at the vP phase edge (incurring a principle C violation), which cannot be reversed (11a). In contrast, when the anaphor is introduced in a goal PP (e.g. (10a)), the DO c-commands the anaphor both before and after movement; I will assume that the DO passes through spec-vP and binding takes place at the vP phase edge as for the other examples (11b). Similarly, in an active clause the IO c-commands the DO at the completion of the vP phase, allowing grammatical binding of an anaphoric DO by the IO in an active clause (10b).
A further note is in order. So far, I have argued that binding dependencies, whether grammatical or ungrammatical, are formed when a phase edge is reached. This suggests that speakers from group 1 should allow passive clauses where a DO anaphor is bound by the IO at the vP phase edge before moving to subject position. However, if the DO is an anaphor and the IO is an R-expression, the derivation does not converge.

McGinnis (2009) proposes that anaphors must have checked Case to be successfully bound (see also Sabel, 2012 on English anaphors) (f 4, p. 9). In (13), the DO has not checked Case when the IO binds it, and binding is unsuccessful. After moving to Spec-TP the DO has no local antecedent and a Principle A violation is incurred. This predicts that a DO anaphor should be grammatical if it could check Case in situ. Indeed, in impersonal passives, a DO anaphor is grammatical.9

For speakers in group 2, the zichzelf anaphor seems to be external-argument-oriented; while (14) is ungrammatical with the reading where the IO is the antecedent for the DO anaphor, (14) is grammatical with the DO anaphor bound by the subject Jan.

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9 The reason (13) is marked with a ? and not a * is that it can be interpreted as an impersonal passive with a topicalized DO given the right context. It is ungrammatical without a topicalization reading.
(14) Jan$_i$ heeft Marie$_j$ waarschijnlijk zichzelf$_{i,j}$ getoond.  
Jan has Mary probably herself shown  
‘Jan probably showed Mary to herself.’

Group 2 speakers do not allow the subject of a passive to bind an anaphor introduced in a goal PP (15).

(15) * Jan$_i$ werd waarschijnlijk aan zichzelf$_i$ getoond.  
Jan became probably to himself shown  
‘Jan was probably shown to himself.’

It is beyond the scope of this paper to fully characterize the distribution of the zichzelf anaphor for Group 2 speakers, but see Rooryck and Vanden Wyngaerd (2011) for a detailed discussion of the distribution of both zichzelf and zich that accords with these judgments. For the purposes of this analysis, the important point is that derived subjects are not eligible antecedents for the zichzelf anaphor in the variety of group 2 speakers. This obscures Irreversible Binding effects in these speakers’ grammars (though the evidence presented here does not constitute counterevidence against Irreversible Binding).

There is a final important point of variation to be addressed. In McGinnis (2004), the equivalent of (13) is reported grammatical; her consultant allows the DO to bind an IO anaphor, unlike my consultants.

(16) Jan$_i$ werd waarschijnlijk zichzelf$_{i,j}$ getoond.  
Jan became probably himself shown  
‘Jan was shown to himself.’ (McGinnis, 2004, p. 53)

McGinnis (2004) proposes a derivation where the IO has inherent Case, allowing the DO to move over the IO on its way to T.\footnote{One anonymous reviewer reports that the DO can move over an in situ IO in his dialect; this speaker seems to also accept binding of an in situ anaphor by the subject of a passive (e.g. Jan werd waarschijnlijk zichzelf getoond.), suggesting that he or she speaks the same variety of Dutch as McGinnis’s consultant (and could even be the same speaker).} I speculate that this is the case; in at least one variety of Dutch, the IO has inherent case and does not intervene between the DO and T. In this variety, the DO moves over an in situ IO to c-command the IO at the vP phase edge. At this point, the DO will irreversibly bind an IO anaphor, creating a grammatical binding dependency.\footnote{In her analysis the DO moves straight to T over the IO, which does not intervene since it has inherent Case. Since I am treating passive vP as a phase for purposes of movement and binding, the DO would move through spec-vP under my analysis, binding the in situ IO from the vP phase edge.}

### 4.3 Previous analyses of movement and binding interactions

While Irreversible Binding (McGinnis, 2009) is able to predict the full range of movement and binding interactions in Dutch, previous approaches to interactions between movement and binding make errant predictions in some cases. I argue that previous approaches fail to capture the full range of patterns of movement...
and binding in Dutch because they propose restrictions on representations rather than derivations; that is, binding dependencies are evaluated based on the relationship between a moved argument and its theta-position. For instance, Rizzi (1986) proposes that a syntactic chain is formed by a series of coindexed syntactic positions, located such that each c-commands the next. No coindexed DP that intervenes between an argument and its theta-position can be omitted in chain formation, but only chains with one argument and one theta position are grammatical. Similarly, McGinnis (2004) proposes that a moved phrase must be able to unambiguously link with its copy at LF. Lethal Ambiguity causes the derivation to crash when an intervening phrase shares the same index and address (determined by the phrase’s sister) as the moved phrase, since either phrase can potentially link with the lower copy.

Both these accounts correctly predict Dutch passives with a coindexed IO and DO to be ungrammatical, since the derivation involves two coindexed arguments, the IO and DO, occupying spec-vP (prior to movement of the DO to spec-TP) and two lower coindexed traces. Lethal Ambiguity rules out this derivation since the scrambled IO and DO share the same address, vP, and index, meaning that either argument is a potential antecedent to either trace; this ambiguity causes the derivation to crash. Rizzi’s theory of chains means that the coindexed DO in the lower specifier of vP must be included in a chain formed between the IO and its trace, but this violates the Chain Condition, since the resulting chain has with two arguments and one theta-position (spec-Appl). Similarly, the trace of the IO must be included in any chain formed between the DO in spec-vP and its trace, but this results in an ungrammatical chain with one argument and two theta-positions.

While both these approaches correctly predict the ungrammaticality of double-object passives with coindexed arguments, both analyses also incorrectly predict scrambling of a coindexed IO and DO in an active clause to be ungrammatical. An active clause with a scrambled IO and DO involves two coindexed arguments in spec-vP and two lower coindexed traces, exactly the configuration that Lethal Ambiguity and the Chain Condition predict to be ungrammatical, and correctly rule out in passive clauses. However, speakers from Group 1 accept active sentences where the coindexed IO and DO both scramble.
Neither Lethal Ambiguity nor the Chain Condition can account for this contrast in grammaticality.

IB correctly predicts active clauses with the IO and DO scrambled and coindexed to be grammatical. Under IB, the scrambled IO binds the DO at the vP phase edge, forming a grammatical binding dependency between the IO and the DO anaphor. This contrasts with passive clauses where the DO cannot be successfully bound as an anaphor, since it has not checked Case, and no longer has an antecedent after moving to spec-TP (see Section 4.1).

In short, unlike previous approaches, IB correctly predicts both cases of grammatical and ungrammatical binding dependencies in Dutch. Acceptable binding relationships are established when the antecedent ccommands the anaphor at the vP phase edge. In passive clauses, acceptable binding relationships are formed when the DO ccommands an anaphor in a Goal PP or when a DO anaphor checks Case in situ and is bound by a ccommanding IO. Similarly, the IO can bind a DO anaphor in active clauses, regardless of scrambling, since the IO always ccommands the DO at completion of the phase. In contrast, the ungrammatical contexts involve an ungrammatical dependency established between an IO anaphor and a DO R-expression at the vP phase edge, or unsuccessful binding followed by a Principle A violation at the next phase.

5 Implications and conclusion

Phase-based, cyclic Spell-Out predicts that semantic interpretation should specifically refer to the configuration accessed by LF at the completion of the phase. The principle of Irreversible Binding operationalizes this prediction. In this paper, I have shown that binding dependencies are evaluated based on the configuration of the coindexed DPs at Spell-Out, rather than based on the relationship between a moved argument and its trace/theta-position. The success of this account suggests that a phase-based model of syntax is indeed explanatory. In the future, it would be interesting to explore whether other semantic effects result from semantic interpretation at the edge of a phase. This is clearly a matter for future research, but wh-reconstruction is a possible candidate. The wh-phrase...
is recorded in its base position by LF when the root node of the vP phase is projected. Subsequent movement of the wh-phrase to the outer specifier of vP (obeying the Phase Impenetrability Condition (Chomsky, 2001)) cannot erase this memory ‘trace’. Hence, a DO wh-phrase, for example, will invariably reconstruct below the subject DP in an active clause. Of course, these ideas are purely speculative at this point.

Throughout this paper, I treat passive vP as phasal, triggering Spell Out. However, Chomsky (2001) characterizes passive vP as a weak phase, while arguing that strong phases are associated with EPP features and cyclic Spell Out. Legate (2003) and Sabel (2012) argue that passive vP in English is a target for movement and a domain for binding, respectively, properties associated with strong phases (which host EPP features and trigger Spell-Out, allowing LF to access the derivation). Similarly, in this paper, passive vP acts as a target for scrambling and a domain for binding, just as active vP in Dutch. In light of this, I suggest the phasal status of passive vP merits further cross-linguistic attention.

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References


