EQUIDISTANCE AND BINDING[*]

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1   Introduction

In the following discussion I will present facts counter to the predictions of the Chain Condition (Rizzi 1986) and its reformulation as the Chain Formation Algorithm (CFA; Snyder 1992).[1] The facts of interest are from Georgian, shown in (1).

(1)   a.   * nino-m   a-nax-a   **gela**   **tav-is tav-s.**
              Nino.ERG R-show-3AOR   Gela.NOM   self-GEN self-DAT
              'Nino showed **himself**$_i$ **Gela**$_i$.'

       b.   ? **deideb-i taviant-i tav-s**   da-e-mal-en.[2]
              aunts-NOM   selves-NOM   self-DAT   PREV-R-hidden-3PL.PRES
              '**The aunts** were hidden from **themselves**.'

In Georgian, either the direct object or the indirect object may raise to subject position in a passive clause. In an active clause, as we see in (1a), the direct object (here marked with nominative case) cannot bind the indirect object. However, if the direct object raises over the indirect object to the subject position of a passive, as in (1b), binding is possible. Binding in such a configuration is disallowed under the Chain Condition/CFA. To account for these facts, I will argue that the Chain Condition and CFA do not apply. Instead, I will propose that a relation of equidistance between two arguments rules out binding. This relation holds in (1a), but not in (1b).

Before continuing, it will be necessary to outline a number of assumptions. I will assume that movement is attraction of a syntactic element to a target (Chomsky 1995), so two arguments can be equidistant from a target, rather than of two targets equidistant from an argument. Equidistant arguments will be assumed to occupy multiple specifiers of the same head (Ura 1994, 1996). Since a subject can usually bind an object, it follows that objects do not normally check case in a position

[1] Moreover, these facts suggest that a representational view of chain formation like that outlined by Rizzi is impossible, though there is not enough space here to explicate the problem in detail. In essence, one argument crossing over another coindexed argument, as in (1b), would make it impossible to identify which head of a chain belongs with which θ-position.
[2] The slight oddness of this example is pragmatic: since it is difficult to be physically hidden from oneself, the example has to be interpreted as something like 'The aunts didn't know themselves well,' which is itself pragmatically odd.

equidistant from the subject; I will assume that object case is checked in a separate projection below the θ-position of the subject (Koizumi 1995, Bobaljik 1995). Moreover, I will assume that free movement is possible in the domain below the external argument.[3] Free movement is optional movement, not driven by feature-checking. However, free movement of an argument may be followed by A-movement for feature-checking.

Let us first clarify the relevant details of Rizzi's (1986) Chain Condition and Snyder's (1992) CFA. Under both accounts, consecutive coindexed elements in a c-commanding relationship form a chain. Exactly one θ-role is permitted for each chain, and exactly one chain for each θ-role. The disallowed configuration is shown in (2).

(2)   A chain is a sequence of coindexed positions such that each of them (but one) is the closest antecedent of the following one. …There is biuniqueness between θ-roles and chains containing exactly one argument. (Rizzi 1986)
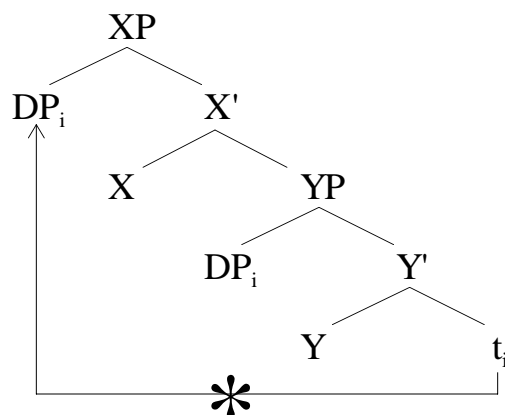

Some cases where binding is ruled out are given below. An Italian example discussed by Rizzi (1986) is given in (3). The ungrammaticality of (3) is supposed to result from the fact that the reflexive clitic *si* intervenes between the coindexed argument *Gianni* and the trace of *Gianni*.

(3) * **Gianni**$_i$ **si**$_i$ è stato   affidato   **e**$_i$ **e**$_i$.
         Gianni   self   was   entrusted
         '**Gianni** was entrusted to **himself**.'

Snyder (1992) shows a similar case from Albanian, taken from Massey (1992). He argues that (4) is ungrammatical because the reflexive indirect object *vetes* intervenes between the coindexed argument *Drita* and the trace of *Drita*.

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[3] Marantz (1984) establishes that the domain below the external argument is syntactically/ semantically distinct. For example, idioms cannot bridge this domain.

(4) * **Drita$_i$** iu tregua **vetes$_i$** prej artistit.
     Drita.NOM cl.DAT show.AOR self.DAT by the artist.ABL
     '**Drita** was shown to **herself** by the artist.'
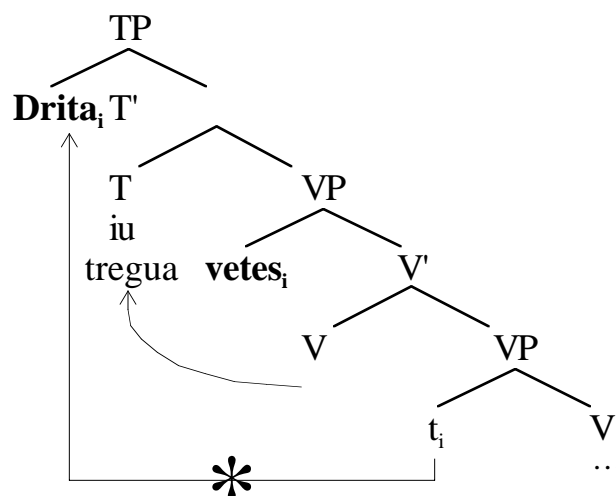
The Chain Condition/CFA predicts binding violations where one argument intervenes between the head and tail of another, coindexed argument chain. On the other hand, the grammatical Georgian example in (1b) has a reflexive indirect object intervening between a coindexed argument and its trace. It appears, then, that the Chain Condition/CFA does not correctly capture the generalization with regard to the binding violations in (3) and (4). As a first step towards understanding what permits the binding configuration in (1b), and what disallows certain other binding configurations, we will consider the options for movement in passive-datives.

2   Movement

The passive-dative construction in Georgian allows movement of either the direct or the indirect object to subject position. In (5), the nominative direct object has raised to the subject position, as is clear from the third-plural nominative subject agreement on the verb.

(5)   **deideb-i** pata-s da-e-Karg-**nen**.
       aunts-NOM Pata-DAT PREV-R-lost-3PL.IMPF
       '**The aunts** were lost to Pata.'

In (6a), on the other hand, the dative indirect object has raised to subject position. This argument triggers the regular plural agreement on the verb. In active clauses, the same agreement can appear with a dative subject, as shown in (6b), but not with a dative indirect object, as in (6c).

(6)   a.   **deideb-s** gela da-e-Karg-a-**t**.
             aunts-DAT Gela PREV-R-lost-3PRES-PL
             '**The aunts** had Gela lost on them.'

b. **deideb-s** gela u-qvar-**t**.
aunts-DAT Gela R-love-3PRES.PL
'**The aunts** love Gela.'

c. **deideb-s** gela e-cxubeb-a (***-t**).
aunts-DAT Gela R-fight-3PRES (*-PL)
'Gela will fight with **the aunts**.'

The fact that there are two options for movement to the subject position in Georgian dative-passives indicates that the direct and indirect objects are able to enter a relation of equidistance. Otherwise, only one of the two arguments would be able to raise to subject position. I will propose that it is this relation of equidistance, rather than the Chain Condition/CFA, which is responsible for binding violations like those seen in (3)-(4). Before going into the details of this proposal, however, let us consider some similar binding violations in Georgian.

3 Binding

There are certain binding violations in Georgian which are similar to putative Chain Condition/CFA violations. While the grammaticality of Chain Condition/CFA violations like (1b) must be explained, it will also be necessary to account for the ungrammatical sentences below.

Consider the active double-object construction in Georgian. An indirect object can bind a direct object, as shown in (7a). It can also bind a possessive anaphor embedded in the direct object (7b).

(7) a. nino-m a-nax-a **cven paTara gela-s tav-is tav-i**.
Nino-ERG R-show-3AOR our little Gela-DAT self-GEN self-NOM
'Nino showed **our little Gela$_i$ himself$_i$**.'

b. nino-m **gela-s tav-is** deida a-nax-a.
Nino-ERG Gela-DAT self-GEN aunt.NOM R-show-3AOR
'Nino showed **Gela$_i$ his$_i$** aunt in the mirror.'

It has been observed (eg. Harris 1981) that a direct object cannot bind an indirect object in an active clause (8a). However, the direct object can bind a possessive anaphor embedded in an indirect object that it raises over (8b).

(8) a. nino-m a-nax-a **gela tav-is tav-s** sarkeSi.
Nino-ERG R-show-3AOR Gela.NOM self-GEN self-DAT mirror.in
'Nino$_i$ showed herself$_i$/***himself$_j$ Gela$_j$** in the mirror.'

b. bavSveb-am **nino tav-is** deda-s a-nax-es.
children-ERG Nino.NOM self-GEN mother- DAT R-show-3PL.AOR
'The children showed **her$_i$** mother **Nino$_i$**.'

Similar binding relations obtain between subject and object. A subject may, of course, bind a reflexive object, but an object may not bind a subject, even after moving over it, as in (9a). However, an object may bind a possessive anaphor embedded in the subject, as in (9b).[4]

(9) a. *** nino   tav-is tav-s   akeb-s.**
        Nino.NOM   self-GEN self-DAT praise-3PRES
        '**Nino** praises **herself**.'

    b. **nino-s   tav-is deda   akeb-s.**
        Nino-DAT   self-GEN mother.NOM praise-3PRES
        '**Her$_i$** mother praises **Nino$_i$**.'

Following the usual assumptions about c-command, we conclude that the subject c-commands an object in its base position, and that the base position of an indirect object c-commands that of a direct object. Some constraint prevents the direct object from binding an indirect object after moving over it, and also prevents an object from binding the subject after moving over it. The Chain Condition/CFA would correctly prevent such binding, but we have already seen in (1b) that violation of these constraints need not lead to ungrammaticality. A new account will therefore be required.

Before proceeding to this account, let us consider another, surprising binding violation from Georgian. We have established that the indirect object is merged in a position c-commanding the direct object, and so can bind it. Moreover, as we have noted, a direct object can bind a reflexive indirect object that it raises across on the way to the subject position (10a), counter to the predictions of the Chain Condition/CFA. Curiously, however, an indirect object that raises to subject position cannot bind a direct object reflexive (10b). The cases in (10), then, are just the opposite of what occurs in active clauses.

(10) a. ? **deideb-i taviant-i tav-s   da-e-mal-en.**
        aunts-NOM selves-GEN self-DAT PREV-R-hidden-3PL.PRES
        '**The aunts** were hidden from **themselves**.' = (1b)

    b. * **deideb-s taviant-i tav-i   da-e-mal-a-t.**
        aunts-DAT selves-GEN self-NOM PREV-R-hidden-3PRES-PL
        '**The aunts** had **themselves** hidden on them.'

The ungrammaticality of (10b) is even more surprising when compared with a similar construction, namely, an active clause with a dative subject. Dative subjects appear in Georgian clauses with either a verb of a certain class (Class 4), or perfect tense/aspect (Series III). If an object is present, it bears nominative case.[5] In Georgian, unlike Icelandic, the dative subject can bind a nominative reflexive (11).

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[4] See Nash (1995) for a detailed discussion of Georgian A- and A-bar positions.
[5] The system of case and agreement in Georgian is extremely complex; for further details and analyses the reader is referred to Harris (1981), Aronson (1990), Marantz (1989), Nash-Haran (1992), Halle and Marantz (1993), Nash (1994), McGinnis (1996).

In fact, dative subjects in Georgian have all the same subject properties as nominative and ergative subjects (McGinnis 1995).

(11) **vano-s**   **tav-is tav-i**   u-qvar-s.
     Vano-DAT   self-GEN self-NOM R-love-3PRES
     '**Vano** loves **himself**.'

A dative subject in Georgian is merged with the same head as a dative indirect object (Marantz 1989, Nash 1994), so that, for example, only one or the other can occur in a single clause. The same morpheme appears on the inflected verb with both types of argument; this morpheme is known in the Georgian literature as the relative prefix. The relative prefix (R) is shown in (12a) with an indirect object, and in (12b) with a dative subject.

(12) a.   gela   **sen**   axal sarval-s   g-**i**-kerav-s.
             Gela.NOM   you.DAT new   trousers-DAT 2-R-sew-3PRES
             'Gela is sewing new trousers for you.'

      b.   **sen**   nino   g-**i**-qvar-s.
             you.DAT Nino.NOM   2-R-love-3PRES
             'You love Nino.'

The arguments in an active dative-subject construction, then, are merged in essentially the same way as those in a passive double-object construction, with one exception: the dative subject in an active clause is an external argument, while the indirect object is an internal argument. Marantz (1989) encodes this distinction in terms of theta-role assignment. However the distinction is encoded, it appears to have important syntactic repercussions. Recall that dative subject of a passive, which originates as an indirect object, cannot bind the direct object (10b). However, an active dative subject, which is merged in the same position as an indirect object, *can* bind the direct object (11).

Something additional seems to be going on in the passive-dative construction, which blocks binding of the direct object by the shifted indirect object. On the other hand, passive-datives allow the direct object to move over an indirect object reflexive and bind it, counter to the predictions of the Chain Condition/CFA. Meanwhile, certain violations also occur which are straightforwardly in accord with the predictions of these constraints. We now turn to an account of the binding and movement facts.

4   Equidistance

As we noted briefly above, either the direct or the indirect object may raise to the subject position of a dative-passive. Ura (1994, 1996) argues that an equidistance relation holds between two arguments which are equally accessible a single target of movement. We may conclude that the direct and indirect objects in Georgian can be equidistant from the subject position of a passive. What I will propose is that it is this relation of equidistance that rules out binding.

Ura proposes that equidistant arguments are multiple specifiers of the same head. For example, he argues that both nominative arguments in the Japanese double-nominative construction occupy the specifier of TP. The availability of multiple specifiers for TP in Japanese permits a superraising construction, in which one of the TP-specifiers provides an 'escape hatch' for movement of a lower argument to a position above TP. A similar phenomenon is permissible in Georgian dative-passives: one object can escape from a position below the other to move to spec-TP. Following Ura's reasoning, we conclude that a multiple-specifier configuration can occur in Georgian in some projection below TP.

As we recall, the grammatical binding configuration in dative-passives occurs when the direct object raises and binds the indirect object from subject position. I will suggest that this is the 'standard' movement in Georgian. I propose that there is free movement below the domain of an external argument in Georgian, and that it is this movement which allows the direct object to leapfrog over the indirect object without becoming equidistant with it.[6]

The structure I propose is given in (13). The passive in Georgian is participial (Marantz 1989), as is indicated by the participle phrase, PartP, dominating the other verbal projections. Let us suppose that PartP has a structural case feature that must be checked. If so, movement of the inherently case-marked indirect object to spec-PartP will not check the structural case-feature. All converging derivations will then involve free movement of the direct object over the indirect object to the specifier of PartP. From spec-PartP, the direct object is the closest argument to the subject position, to which—all else being equal—it is then attracted.

(13) ? **deideb-i taviant-i tav-s**   da-e-mal-en.
      aunts-NOM   selves-NOM   self-DAT PREV-R-hidden-3PL.PRES
      '**The aunts** were hidden from **themselves**.'   (=1b)

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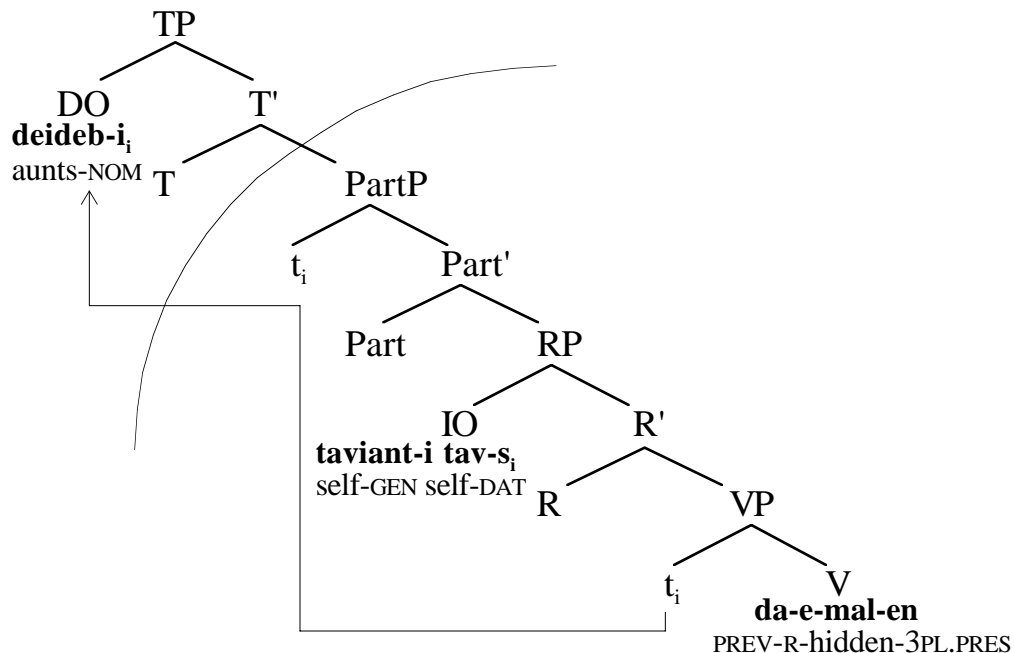
[6] No external argument is shown in the passive structure in (13). The domain of free movement is indicated by a curved line.

If this proposal is correct, the only way for the indirect object to move into the subject position is to move freely into another specifier of PartP. From this position, it is equidistant with the direct object from the subject position. Either object may then raise to the subject position. One possible derivation, in which the indirect object raises to the subject position, is given in (14).

(14)   **deideb-s** gela   da-e-Karg-a-**t**.
      aunts-DAT   Gela   PREV-R-lost-3PRES-PL
      '**The aunts** had Gela lost on them.'
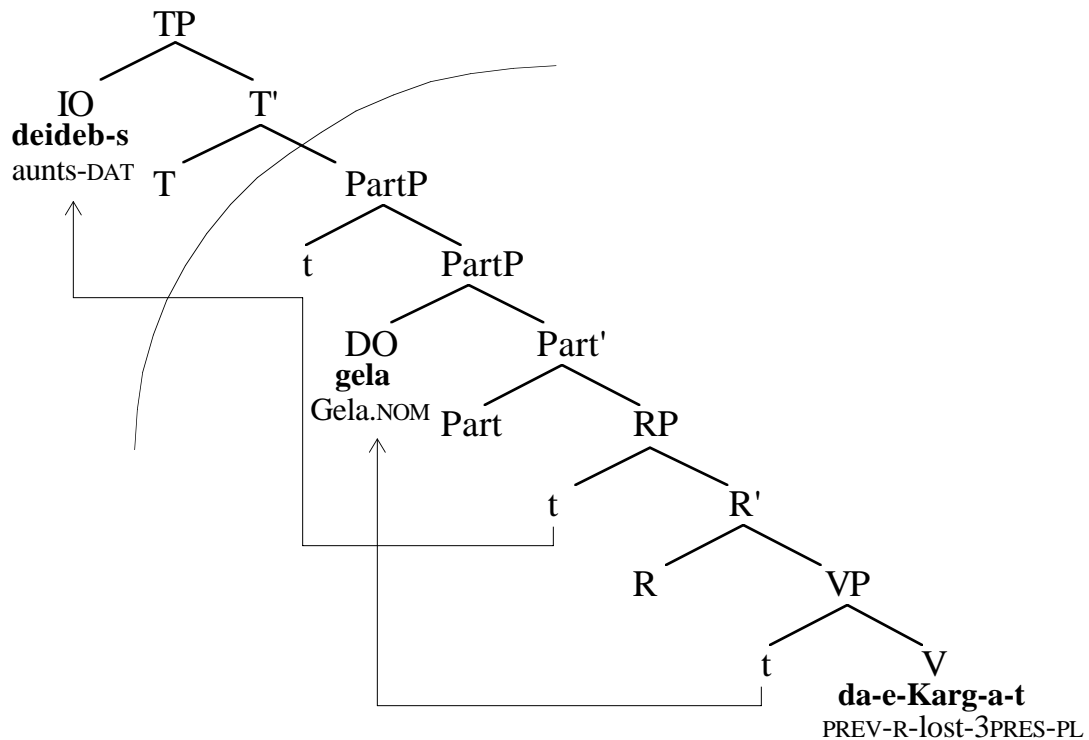
The main proposal here is that the equidistance relation between the direct and indirect objects rules out binding in (14). Binding in (13) is fine, since there is no equidistance relation between the arguments. Thus there is an acceptable derivation in which the object raises to subject position and binds an indirect object. However, binding is ruled out in any derivation with the indirect object in subject position, such as (14), since to move there it must pass through a position equidistant to the direct object in spec-PartP.

Further support for this hypothesis comes from the original core case of equidistance in Japanese. In (15), where both nominative arguments occupy the specifier of TP, binding is impossible (Ura, p.c.).

(15) a. * **Jason-ga$_i$** **kare-zisin-ga$_i$**   sinpai-da
         Jason-NOM   he-self-NOM   worry-PRES
         '**Jason** worries about **himself**.'

   b. * **kare-zisin-ga$_i$**   **Jason-ga$_i$**   sinpai-da
         he-self-NOM   Jason-NOM   worry-PRES

$$\text{*TP}$$

Tree:
*TP
  Jason-ga$_i$ TP
            kare-zisin-ga$_i$ T'
   T   …
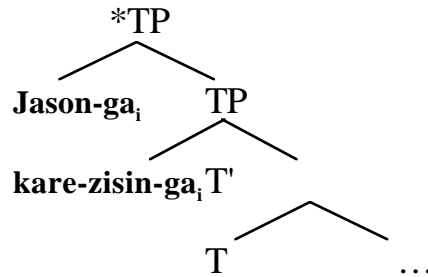
In (16), however, the subject and object are not equidistant, as is evident here from their case-marking. In this configuration, binding of the object by the subject is acceptable.

(16) a. **Jason-ga$_i$**   **kare-zisin-o$_i$**   sinpai-siteir-u
         Jason-NOM   he-self-ACC   worry-PROG-PRES
         '**Jason** is worrying about **himself**.'

   b. **Jason-ni$_i$ kare-zisin-ga$_i$**   sinpai-da
         Jason-DAT   he-self-NOM   worry-PRES
   '**Jason** worries about **himself**.'

   It should be noted that while an argument cannot bind an equidistant anaphor, it can bind an anaphor embedded in an equidistant argument. Such a configuration is shown in (17).

(17) **Jason-ga$_i$** [**kare-zisin-no$_i$** imooto]-ga sinpai-da
      Jason-NOM   he-self-GEN   sister-NOM   worry-PROG-PRES
      'Jason$_i$ worries about his$_i$ sister.'

Tree:
TP
  Jason-ga$_i$ TP
           kare-zisin-no$_i$ T'
             imooto-ga
   T   …
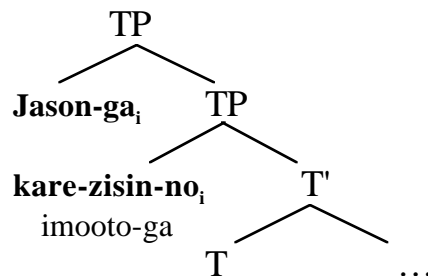
The same configuration also arises in Georgian. For example, an object crossing over an indirect object in an active clause cannot bind it, but can bind a possessive anaphor embedded within it (18). If our reasoning so far is correct, we can conclude that the direct and indirect objects are equidistant in this configuration.

(18) bavSveb-am **nino**   [tav-is   deda/***tav**]-s   a-nax-es
      children-ERG Nino-NOM   self-GEN mother/*self-DAT   R-show-3PL.AOR
      The children showed **her**_i mother/***herself**_i **Nino**_i.'

RP tree:
- RP
  - **Nino**_i
  - RP
    - **tavis**_i dedas / *** tavis tavs**_i
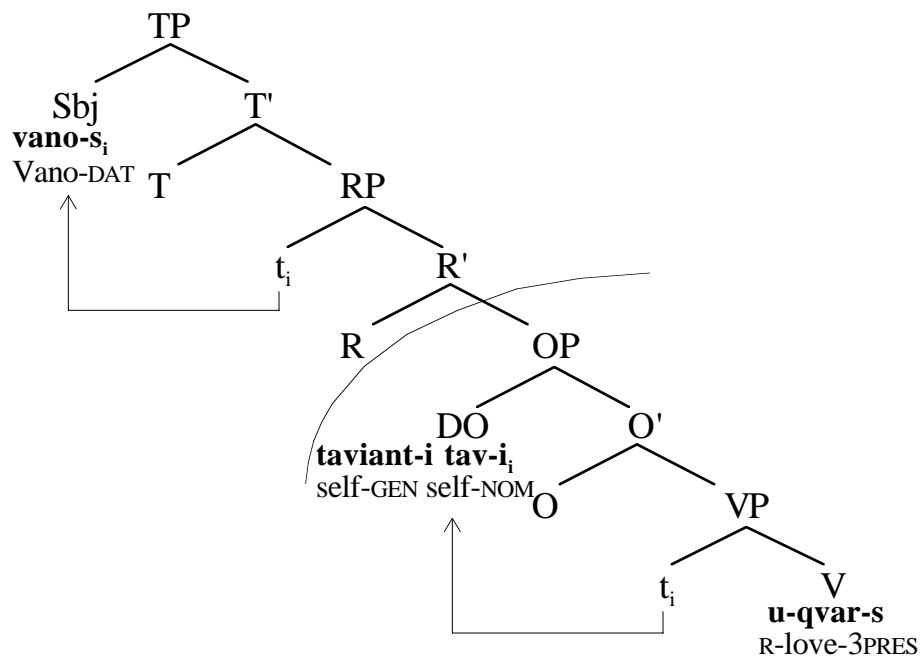   - R'
      - R
      - …
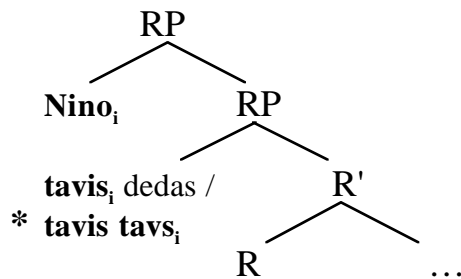
Similarly, an object crossing over a subject cannot bind it, but can bind into it, as shown in (19). Given the same reasoning, these two arguments are also equidistant.

(19) **nino-s**   [**tav-is** deda/***tav-i**]   akeb-s
      Nino-ACC self-GEN   mother.NOM/*self-NOM   praise-3PRES
      '**Her**_i mother/***herself**_i praises **Nino**_i.'

TP tree:
- TP
  - **Ninos**_i
  - TP
    - **tavis**_i deda/ *** tavis tavi**_i
    - T'
      - T
      - …
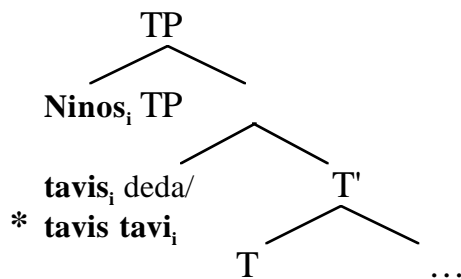
The analysis of passives with a dative subject can be contrasted with the structure in (20), which represents an active clause with a dative subject. Unlike the subject of a passive, this subject is an external argument. Thus the domain of free movement does not include the projection (RP) containing its base position. As a result, the object, which checks its case below the base position of the subject, cannot move freely over it to a position equidistant from the specifier of TP. Of course, since the active clause has no PartP projection above RP, with a head needing to be checked by a structural case feature, the derivation will converge with the structurally case-marked object remaining below RP. The dative subject of an active clause is always the closest argument to TP, by contrast with the passive, in which either the dative or nominative argument may be close enough to move to spec-TP. Moreover, the dative subject of an active clause does not enter a relation of equidistance with the nominative object on the way to spec-TP, unlike that of a passive clause, which must move through a second specifier of PartP. Thus, in an active clause, unlike a passive clause, a dative subject may bind a nominative object.

(20)

TP

Sbj — T"
vano-s$_i$
Vano-DAT   T — RP

t$_i$ R'

R   OP

DO   O'
taviant-i tav-i$_i$
self-GEN self-NOM   O   VP

t$_i$ V
u-qvar-s
R-love-3PRES

Without going into the details, it may be supposed that the cases discussed by Rizzi (1986) and Snyder (1992), such as (3)-(4) above, also involve an equidistance relation which rules out binding.

5   Conclusions

We have seen a case of movement that goes counter to the predictions of Rizzi's (1986) Chain Condition and Snyder's (1992) Chain Formation Algorithm. I have proposed that the grammaticality of such constructions results from free movement below the domain of the external argument. Free movement allows one argument to leapfrog over another without entering a relation of equidistance with it. For example, in Georgian, the direct object in a passive moves freely over the indirect object without becoming equidistant with it.

To account for putative effects of the Chain Condition/CFA, I have proposed that these effects arise from equidistance. Once two arguments become equidistant, neither argument can bind the other. On the other hand, it is possible for one argument to bind an anaphor that is embedded in an equidistant argument. This reanalysis of the conditions on movement provides an important tool for investigating structural configurations cross-linguistically.

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