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Reexamining Condition C Effects

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0. Introduction
This paper reexamines Binding Condition C effects and shows that Binding Condition C is not a reliable diagnostic for the distribution of nominal phrases. The main claim of this paper is that Condition C effects should be captured in terms of a condition on anaphoric dependence ("General Patterns of Anaphoric Dependence" in Williams 1997), not by a structural condition on coreference ("Binding Theory Condition C" in Chomsky 1981).

1. Condition C effects as anaphoric dependence effects
When a sentence contains an R-expression that serves as the antecedent of another NP, the distribution of the NPs is constrained in a certain way. For example, the sentences in (1) are acceptable when the R-expression his term paper precedes the pronoun it as in (1a)-(1b), but when the pronoun follows the R-expression, the sentence is acceptable only if the pronoun is within a subordinate clause as in (1c). If the pronoun is within a matrix clause, the sentence is unacceptable as in (1d).\(^1\)

(1) a. Anyone [who has written his term paper] can turn it in to me now.
   b. Anyone can turn his term paper in to me now [who has written it].
   c. Anyone [who has written it] can turn his term paper in to me now.
   d. *Anyone can turn it in to me now [who has written his TERM PAPER].
      (Williams 1997:587)

Binding Theory Condition C (BT-C), defined as in (2), attributes the unacceptability of the sentence in (1d) to the R-expression his term paper which is illegitimately bound by (i.e. c-commanded by and coindexed with) the pronoun it.

\(^1\) I thank the members of UBC pronoun reading group, particularly Rose-Marie Déchaine and Martina Wiltischko, for valuable comments on earlier versions of this paper. Thanks also go to Lynn Nichols and Benjamin Shaer for insightful comments and questions at and since the annual meeting of BLS. The research in this paper is in part supported by SSHRC 410-2002-1078 to Martina Wiltischko (principal investigator), which is gratefully acknowledged.

\(^1\) Throughout the paper, the XP which serves as an antecedent of a proform is bolded, the proform is in italics, and the word(s) with main sentence stress is/are in UPPER CASE LETTERS.
(2) Binding Theory Condition C (BT-C)
An R-expression is free. \( \text{Chomsky 1981:188} \)

On the other hand, Williams (1997) takes the pattern in (1) as an instance of the General Patterns of Anaphoric Dependence (GPAD) which is illustrated as follows:

(3) General Patterns of Anaphoric Dependence (GPAD, based on Williams 1997:588)
forward dependence A. […]antecedent[…]subord [...]pro…]matrix
B. […]antecedent[…]matrix […]pro…]subord
backward dependence C. […]pro…]subord […]antecedent[…]matrix
D. *[…]pro…]matrix […]antecedent[…]subord

The (3A)-(3D) patterns correspond to the (a)-(d) examples in (1). The GPAD says that anaphoric dependence can be forward as in (3A-B), or backward and down as in (3C). The dependence of a pronoun on its antecedent NP in (1) is not the only paradigm governed by the GPAD and examples that involve a null VP and its antecedent are also subject to the GPAD:

(4) a. Anyone [who wants to see the doctor] can \( \theta_{vp} \).
b. Anyone can see the doctor [who wants to \( \theta_{vp} \)].
c. Anyone [who wants to \( \theta_{vp} \)] can see the doctor.
d. *Anyone can \( \theta_{vp} \) [who wants to see the doctor]. \( \text{cf. Williams 1997:591} \)

The GPAD is designed to rule in an acceptable sentence such as (5), where the putative antecedent does not have main sentence stress and the antecedent itself becomes anaphoric:

(5) [Context: I assume you recall that this course requires a term paper.]
Anyone can turn it in to me now [who has WRITTEN his term paper]. \( \text{Williams 1997:588} \)

In this case, the pronoun it is dependent not on the following NP his term paper, but on the preceding NP a term paper in the context, thereby canceling the illegitimate backward-up pattern in (3D) (cf. compare with (1d)). Note further that c-command is not the relation governing the paradigm in (1), and the BT-C does not predict the unacceptability of (6):

(6) *Anyone can try [to hand it in to me] [who has written HIS TERM PAPER]. \( \text{Williams 1997:588} \)

In (6), the pronoun it is embedded more deeply than in (1d) and the R-expression cannot be c-commanded by the pronoun. Still, the sentence is unacceptable. The GPAD correctly excludes the sentence in (6) because this is the illegitimate backward-up pattern.

In the next section, I will show that Condition C effects in general are better captured in terms of the GPAD than the BT-C.
2. Deriving Condition C effects

2.1. Forward dependence: wh-movement

An apparent problem for the GPAD is found in wh-movement examples:

(7) a. Which claim [that offended John] was he willing to talk about?
    b. *Which claim [that John was wrong] was he willing to talk about?

The contrast between a wh-phrase with an adjunct relative clause and a wh-phrase with a complement clause with respect to the interpretational possibilities of the name John is observed in e.g. Riemsdijk and Williams (1981), Lebeaux (1988,1991): if the name is contained in an adjunct as in (7a), the name can refer to the same entity as the following pronoun he, but this interpretation is not available if the name is contained in a complement as in (7b). That is to say, "Condition C effects are abrogated when the fronted name is contained in an adjunct" (Lebeaux 1991:212).

Before looking at the proposed analysis of this contrast, let me talk about the empirical issues regarding the contrast. First, the contrast in (7) is not as clear as it was originally claimed, which is suggested by acceptability judgments by three native speakers I consulted:

(8) Acceptability of the sentences in (7)

<table>
<thead>
<tr>
<th></th>
<th>Speaker A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>(7) a.</td>
<td>√</td>
<td>√</td>
<td>??</td>
</tr>
<tr>
<td>b.</td>
<td>?</td>
<td>?</td>
<td>?*</td>
</tr>
</tbody>
</table>

Furthermore, Speaker A notes that the sentence in (7b) is as good as (7a) if there is a preceding context that "several people made a claim that John was wrong". Also, the contrast in (7) is questioned in the literature and there are more than a few acceptable wh-movement sentences with a complement clause, two of which are presented in (9).

(9) a. Which piece of evidence [that John was guilty] did he successfully refute? (Lasnik 1999:209)
    b. Whose claim [that the Senator has violated the campaign finance regulations] did he dismiss as politically motivated? (Kuno 1997)

With this in mind, let us look at the analyses.

2.1.1. GPAD

The GPAD predicts that all the wh-movement sentences in (7) and (9) are acceptable because they all show the legitimate forward-down pattern in (3A).

(7') a. ...[...John...][...he... : GPAD (3A)
    b. *...[...John...][...he... : GPAD (3A)
(9') a. ...[...John...][...he... : GPAD (3A)
    b. ...[...the Senator...][...he... : GPAD (3A)

Since the GPAD is not sensitive to the distinction between adjunct and complement clauses, it does not predict the contrast in (7). Given that (7b) is not as bad as claimed and
becomes acceptable in an appropriate context, it does not constitute a counterexample to the GPAD.

2.1.2. Binding Theory Condition C: Lebeaux's explanation
The acceptability of the sentence in (7a) is referred to as the "anti-reconstruction effect" in the sense that the wh-phrase that contains the name John does not seem to reconstruct into the pre-wh-movement position (indicated by the underscore in the examples repeated below) where Binding Condition C (BT-C) would be violated.

(7) a. Which claim [that offended John] was he willing to talk about _?
   b. *Which claim [that John was wrong] was he willing to talk about _?

Lebeaux (1988,1991) explains the contrast in terms of the difference in how adjuncts and complements enter the derivation. He argues that the Projection Principle (Chomsky 1981:29) requires complements, but not adjuncts, to be present at D-structure, and adjuncts could be attached at any stage in the derivation. Given this argument, the sentence in (7a) can have a derivation such as (10a), whereas (7b) has the derivation in (10b):

(10) a. Derivation of (7a)

\[\text{he was willing to talk about which claim that offended John} \Rightarrow \text{wh-movement}\]

\[[\text{which claim}] \text{ was he willing to talk about } _{\text{that offended John}} \Rightarrow \text{late-merge of adjunct}\]

\[[\text{which claim [that offended John]] was he willing to talk about _} ? \:	ext{BT-C satisfied}\]

(10) b. Derivation of (7b)

\[*\text{he was willing to talk about which claim that John was wrong} \Rightarrow \text{wh-movement}\]

\[[\text{which claim that John was wrong}] \text{ was he willing to talk about _} ? \]

In (10a), wh-movement occurs before the adjunct clause is adjoined (i.e. “merged” in Minimalist terms, cf. Chomsky 1995) into the wh-phrase, and the adjunct clause is adjoined to the already fronted wh-phrase via “late-merge”, thereby satisfying the BT-C at every stage of the derivation. In contrast, the complement clause in (10b) must be merged into the wh-phrase at D-structure, resulting in violation of the BT-C, which Lebeaux assumes to apply throughout the derivation.

There are empirical and theoretical problems with Lebeaux's proposal regarding the contrast in (7). First, BT-C under his mechanism excludes the cases of wh-phrase with a complement altogether, and hence it wrongly excludes acceptable sentences in (9) and
also (7b) when it is acceptable with an appropriate context. Theoretically, Lebeaux’s rationale for exceptional behavior of adjuncts is not available in the standard Minimalist framework (Chomsky 1995) where D-structure and the Projection Principle are abandoned. Furthermore, the late-merge operation does not satisfy the Extension Condition on structure-building in that an adjunct is embedded within another syntactic object.

2.2. Backward dependence: extraposition from NP

Fox and Nissenbaum (1999) argue that there is a contrast with respect to Condition C effects between extraposition of an adjunct and extraposition of a complement:

(11) a. I gave him an argument yesterday [that supports John’s theory].
    b. ??/*I gave him an argument yesterday [that this sentence supports John’s theory].

(Fox and Nissenbaum 1999:138)

Their generalization is that “extraposition of adjuncts bleeds Binding Condition C” (p.139). As is the case with wh-movement sentences, however, the contrast between adjunct and complement cases is subtle if any, and three native speakers I consulted find the sentence in (11b) as bad as the sentence in (11a). Furthermore, both (11a) and (11b) become acceptable when the putative antecedent John is destressed and used anaphorically in an appropriate context:

(12) [Context: John has been facing lots of counterexamples to his theory and is quite disappointed at that. But finally…]
    a. ?I gave him an argument yesterday [that SUPPORTS John’s theory].
    b. ?I gave him an argument yesterday [that THIS SENTENCE supports John’s theory].
    b’. ?I gave him an argument yesterday [that this sentence SUPPORTS John’s theory].

With these data in mind, let us turn to the analysis.

2.2.1. GPAD

The GPAD predicts that the extraposition from NP sentences in (11) are unacceptable because they represent the illegitimate backward-up pattern in (3D).

(11’) a. …him… […John’s…] : GPAD *(3D)
    b. ??/* …him… […John’s… ] : GPAD *(3D)

Given that the acceptability of (11a) is dubious, it does not constitute a counterexample to the GPAD.

The improvement of the sentences in an appropriate context, illustrated in (12), is exactly what the GPAD predicts.

(12’) a. ?John… …him… […John’s… ] : GPAD *(3D) cancelled
    b. ?John… …him… […John’s… ] : GPAD *(3D) cancelled
In (12), the putative antecedent NP *John* is used anaphorically and hence distressed. Therefore, the pronoun *him* is dependent on the NP *John* in the preceding context, not on the following NP *John* within the same sentence, the illegitimate backward-up pattern being cancelled.

2.2.2. Binding Theory Condition C: Fox and Nissenbaum’s explanation

Fox and Nissenbaum (1999) propose different derivations for extraposition of adjuncts and extraposition of complements. In addition to Lebeaux’s proposal that adjuncts, but not complements, can late-merge, they assume that a host NP of an extraposited adjunct undergoes rightward Quantifier Raising (QR) to the vP-adjointed position, and spell-out can apply more than once. The derivations of the extraposition from NP sentences in (11) are illustrated in (13):

(13) a. Derivations of (11a)

I gave *him* an argument yesterday that supports *John’s* theory
⇒ Spell-out, and
QR of the host NP
⇒ late-merge of adjunct

I [vP [vP gave *him* [an argument] yesterday] [an-argument]]
that supports *John’s* theory
⇒ Spell-out
: BT-C satisfied

I [vP [vP gave *him* [an argument] yesterday] [an-argument [that supports *John’s Theory]]].

b. Derivation of (11b)

I gave *him* [an argument [that this sentence supports *John’s theory]] yesterday.
⇒ extraposition from NP

*I gave *him* [an argument _ ] yesterday [that this sentence supports *John’s theory].
⇒ BT-C violated

First, let us look at the derivation of extraposition of an adjunct in (13a). With Lebeaux’s proposal, the adjunct relative clause can start as an independent syntactic object. After the root sentence gets spelled out, the host NP *an argument* undergoes QR to the vP-adjointed position, and the adjunct is late-merged into the QR’ed NP. Since the host NP is already spelled out, the QR’ed NP is not pronounced. There is no BT-C violation because the name *John* is in a higher position than the object NP *him*. In the case of extraposition of a complement in (13b), neither late-merge nor QR of the host NP is available and the complement clause undergoes rightward extraposition movement in a traditional fashion, presumably to the position c-commanded by the object NP, where the BT-C is violated.  

Besides the empirical issues regarding the contrast in (11), i.e. the contrast is not as clear as Fox and Nissenbaum claim, and the sentence in (11b) significantly improves in

2Fox and Nissenbaum (1999) are not clear about the exact landing site of extraposed complements.
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an appropriate context as is shown in (12b), there are conceptual and theoretical problems with Fox and Nissenbaum’s explanation. First, the QR operation of a host NP in extraposition of adjuncts is not independently motivated. Moreover, nothing guarantees that QR should be “rightward” (as is pointed out in Chomsky 2001:18-19). Their explanation also carries over Lebeaux’s theoretical problem that late-merge is an extraordinary structure-building operation in that it does not satisfy the Extension Condition.

2.3. Another argument against Binding Theory Condition C: as-parentheticals
It is observed that Condition C effects in sentences with as-parentheticals are far from clear:

(14) a. She owns, as Sue told us, a dozen or so unicycles.
    b. *He told his mom that, as Julio had promised, the dishes were done.
       (Potts 2002:666fn)

The variation in acceptability is independent of the issue of adjunct vs complement distinction, because there is an agreement that as-parentheticals are not complements to any head no matter how they are represented in syntax. The dependence pattern in the sentences in (14) is backward, and whether it is up or down depends on how as-parentheticals are analyzed syntactically. The GPAD predicts that the sentence in (14b) improves if the pronouns (he and his) take an antecedent from the preceding context, thereby achieving forward dependency. This prediction is borne out to a certain extent:

(15) [Context: Julio does not do the dishes and is always scolded by his mom.
    Yesterday his mom had to stay at work until late and made Julio promise her to
    do the dishes by the time she comes back home. When she got home…]
    */He told his mom that, as Julio had promised, the dishes were done.

Among two native speakers who did not accept the sentence in (14b), one of them accepted the sentence in the context in (15), but the other did not. To interpret this individual variation, more examples from as-parentheticals should be checked with native speakers, which I leave for future research.

3. Consequences of the proposal
3.1. Eliminating “late-merge” from the computational component
By having the Binding Theory Condition C (BT-C) being replaced with the General Patterns of Anaphoric Dependence (GPAD) in explaining Condition C effects, the computational component does not have to resort to the late-merge operation any more. This is a welcome consequence theoretically (cf. Chomsky 2001:19) because late-merge departs from the Minimalist way of structure-building (i.e. Merge) in that it does not satisfy the Extension Condition on structure-building. The elimination of late-merge was made possible only after reexamining the alleged contrast between adjunct and

3Fox and Nissenbaum (1999) show that presence and absence of QR in adjunct extraposition and complement extraposition, respectively, can predict their difference in scope-marking, but still fail to motivate QR in adjunct extraposition.
complement displacement cases by embedding them in appropriate contexts and abandoning the significance of those contrasts (e.g. wh-movement in (7) and extraposition from NP in (11)).

3.2. Loose ends
Although the GPAD is designed to apply generally to any anaphoric dependence, it is too weak in that it wrongly allows unacceptable dependence cases. For example, nothing should be wrong with the unacceptable sentences in (16) as far as the GPAD is concerned because they establish legitimate forward-down (3A) and backward-down (3C) patterns, respectively:

(16) a. *[Which claim [that offended everyone]] was he willing to talk about [which claim [that offended everyone]]?
   a*. *[…everyone…] …he… : GPAD (3A)
   b. [Which claim [that offended him]] was *everybody/??every man/each man
      willing to talk about [which claim [that offended him]]?
   b*. *??/??/…[…him…] …QP… : GPAD (3C)

I argue here that the sentence in (16a) is excluded by the c-command condition on bound variables, independently of the GPAD: the pronoun he is not bound by the quantifier phrase (QP) everyone at any point of the derivation, and hence cannot have a bound variable reading. Now that we abandon late-merge of adjuncts, nothing prevents the existence of the adjunct clause in base position. However, the QP within the adjunct in the base position does not c-command the pronoun either. On the other hand, the acceptability of the sentence in (16b) varies depending on the type of the antecedent QP. The acceptability of the sentence with the QP each man is compatible with the GPAD, and I argue that the unacceptability of the sentences with the QPs everybody and every man is due to a condition other than the GPAD (the nature of which is still to be examined).

Related to the empirical coverage of GPAD, it is worth noting here the theoretical issues and problems regarding the nature of GPAD. The first problem is that the GPAD is too weak in the sense that we have just seen and needs to be supplemented by other conditions on the distribution of NPs, for example, the c-command condition on bound variable pronouns.

Another major issue is why the GPAD is stated the way it is. Unless we answer this question, the GPAD is merely a description of linguistic phenomena, not an explanation. The GPAD consists of two cross-cutting notions: forward vs backward and up vs down. My speculation is that these notions are motivated by the properties of human cognitive processes, in particular, sentence processing. For example, it is easier to process the dependence relation if the antecedent with an independent semantic content precedes its dependent than the opposite pattern (cf. Hawkins 2002) and the opposite pattern is possible to the extent that the structural relation between an antecedent and its dependent

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4 When it comes to PP complements and adjuncts, things are even less clear. (See e.g. Reinhart 1983 and Speas 1990 for Condition C effects observed in fronted PPs.) Shaer (p.c.) notes that in German, fronted PPs, whether they are adjuncts or complements, usually show Condition C effects (i.e. no anti-reconstruction effects).
is compatible with a certain cognitive (processing) domain (cf. Reinhart 1983:ch10, Deane 1992). This issue remains to be further explored.

4. Summary
The General Patterns of Anaphoric Dependence (GPAD) proposed in Williams (1997) captures Condition C effects better than the Binding Condition C (BT-C), in that the former (i) rules in acceptable examples which the latter would wrongly rule out, and (ii) predicts variations in acceptability judgments. A welcome consequence of replacing the BT-C with the GPAD is that the theoretically problematic operation, late-merge, can be eliminated. The GPAD, however, lacks explanatory power at the moment.

References


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