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VP-DELETION AND
 “NONPARASITIC” GAPS
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1 VP-Deletion, Parasitic Gaps, and Islands

Kim and Lyle (1995, 1996) discuss a very interesting set of facts involving parasitic gaps and VP-deletion (see also Rooth 1981 and Kehler 1993). They observe that apparent parasitic gap constructions do not show island effects when the gap is contained in a deleted VP, as demonstrated by the contrast between the (a) and (b) examples in (1)–(4) (in which the extraction islands are enclosed in brackets). In each set, the (a) example illustrates the well-known fact that parasitic gaps are sensitive to islands, and the (b) example shows that when the gap is contained in a deleted VP, the island effect disappears. (1)–(3) make this point for *wh*-islands, extraction from an adjunct, and complex NPs, respectively, and (4) shows that deletion even saves violations of the Coordinate Structure Constraint.¹

An earlier version of this squib was presented at the annual meeting of the Linguistic Society of America in San Diego, California, January 1996, and I am grateful to audiences there and at the University of California, Santa Cruz, for useful comments. In addition, I would like to thank Dan Hardt and Sandy Chung for helpful discussion of these issues, and two *LI* referees for detailed comments on an earlier draft. Any inconsistencies, errors, or omissions that remain in the current version are my responsibility.

¹ Similar examples are also discussed by Lappin (1992, 1996), who presents sentences like (i)–(ii) in support of the position that VP-deletion does not ameliorate island effects in parasitic gaps (though Lappin (1996:fn. 6) observes that not all speakers find these sentences unacceptable). The judgments shown here are those given in Lappin 1996.

- (i) ??This is the book which Max read before hearing the claim that Lucy did.
- (ii) *This is the play which John saw before Bill went because he wanted to.

Although these examples are clearly degraded, there are at least two reasons to believe that their awkwardness is due to factors independent of the parasitic gap issue. First, (iii)–(iv), although not ungrammatical, are only marginally

Wh-islands

- (1) a. *Which article_i did you read t_i after Jim asked [who would be willing to summarize e_i]?
 b. Which article_i did you read t_i after Jim asked [who would be willing to ____]?

Adjuncts

- (2) a. *Which movie_i did you see t_i because Polly was so excited [after going to e_i]?
 b. Which movie_i did you see t_i because Polly was so excited [after she did ____]?

Complex NPs

- (3) a. *Dick Dale_i, who we attempt to emulate t_i despite the admonitions of [many people who say we shouldn't try to sound like e_i], is performing tonight at the Catalyst.
 b. Dick Dale_i, who we attempt to emulate t_i despite the admonitions of [many people who say we shouldn't ____], is performing tonight at the Catalyst.

Coordinate structures

- (4) a. *Which books_i did you read t_i after learning that Erik [read e_i and found them_i interesting]?
 b. Which books_i did you read t_i after learning that Erik [did ____ and found them_i interesting]?

Kim and Lyle conclude from these facts that at least some parasitic gaps must be licensed at LF. This analysis is very important, because the traditional analysis of parasitic gaps—that they are licensed at S-Structure (Chomsky 1986; see also Engdahl 1983, 1984, Chomsky 1982)—constitutes a significant challenge to the hypothesis put forth in Chomsky 1993, 1995 that all grammatical constraints are enforced at the interface levels LF and PF. If Kim and Lyle's analysis is correct, however, the status of parasitic gaps as an argument against Chomsky's recent proposals must be called into question.

Kim and Lyle's argument runs as follows. Assume first that Sub-

better than (i)–(ii). Neither of these examples involves extraction out of either the antecedent or deleted VP, however.

(iii) Max read this book before hearing the claim that Lucy did.

(iv) John saw this play before Bill went because he wanted to.

Second, (v)–(vi), in which the deleted VPs are in positions structurally identical to those in (i)–(ii), are significantly more acceptable (see also (2b) and (3b)).

(v) This is the book that Max reviewed before hearing the news that Lucy already had.

(vi) This is the play that John decided to see only after we criticized him because he hadn't.

These facts, along with the clear contrasts between the (a) and (b) sentences in (1)–(4), suggest that the awkwardness of (i)–(ii) stems from a difficulty in identifying the antecedent VP in these particular examples, not from illicit parasitic gap configurations.

jacency is a constraint on movement, and second that a deleted VP is devoid of structure prior to LF, at which point its structure is built in by a copying operation of some sort (see May 1985, Haik 1987, Kitagawa 1991, Chung, Ladusaw, and McCloskey 1995). If a deleted VP has no structure prior to LF, then there is no parasitic gap chain in examples like the (b) cases of (1)–(4) at S-Structure. The chain cannot be created until after the antecedent VP has been copied into the position of the elided one, introducing an empty category. Kim and Lyle suggest that a null operator is then inserted into the structure, creating the parasitic gap chain (cf. Contreras 1984). Because this operation does not involve actual movement, sentences of this type do not show Subjacency effects. Moreover, since the parasitic gap chain is not instantiated until after the deleted VP has been rebuilt, it must be the case that some parasitic gap chains are licensed at LF.

My intention in this squib is to present an alternative explanation of the grammaticality of the (b) examples in (1)–(4). Specifically, I will argue that sentences like the (b) cases of (1)–(4) do not show Subjacency effects because they do not contain parasitic gap chains at all. Instead, I will claim that the “gap” in the deleted VP is actually a pronoun, which is interpreted as a variable bound by the overt *wh*-operator. That is, I will argue that the actual LF representations of the (b) examples of (1)–(4) are (5)–(8) (in which the content of the deleted VP is shown in boldface). Like their counterparts that do not involve VP-deletion, these LF representations are perfectly well formed.

- (5) which article_i did you read t_i after Jim asked who would be willing to **read it**_i
- (6) which movie_i did you see t_i because Polly was so excited after she **saw it**_i
- (7) Dick Dale, who_i we attempt to emulate t_i despite the admonitions of many people who say we shouldn't **attempt to emulate him**_i, is performing tonight at the Catalyst
- (8) which books_i did you read t_i after learning that Erik **read them**_i and found them_i interesting

I will support this proposal by showing that the “gap” in the deleted VP in sentences like these is not sensitive to strong crossover (Condition C), which should be the case if it were a true parasitic gap, but is instead sensitive to Condition B, as expected if it is a pronoun. A result of this analysis is that “nonparasitic” gap structures like the (b) cases of (1)–(4) provide additional empirical evidence for the operation of *vehicle change* proposed by Fiengo and May (1994), which (among other things) establishes identity between a coindexed pronoun and \bar{A} -trace in the context of VP-deletion.

2 Vehicle Change

Since at least the appearance of Sag 1976 and Williams 1977, it has been accepted that VP-deletion is licensed by some kind of identity

relation between logical representations. Following Fiengo and May (1994), I will assume that this relation is stated in terms of *reconstruction*: formal identity between representations at LF (see Wasow 1972, Williams 1977, May 1985, Haik 1987, Kitagawa 1991, and Chung, Ladusaw, and McCloskey 1995 for related approaches).

A number of facts indicate that reconstruction cannot require strict syntactic identity. Those of relevance here are exemplified by sentences like (9) and (10), discussed by Fiengo and May (1994) (sentences like (10) were originally discussed by Webber (1978)).

(9) Achtenberg supports Brown_i, and he_i thinks Alioto does, too.

(10) Albert named a country that he wants to visit, and given the amount of traveling he does, I'm sure that he will.

(9) shows that VP-deletion eliminates Condition C effects. If (11) were the LF representation of (9), as we would expect if deletion required strict identity, then (9) would violate Condition C.

(11) *Achtenberg supports Brown_i, and he_i thinks Alioto **supports Brown_i** too

Similarly, (10) indicates that VP-deletion can eliminate at least some Empty Category Principle (ECP) effects. If the LF representation of (10) were (12), then this sentence would violate the ECP, because the trace in the elided VP is not antecedent-governed.

(12) *Albert named a country Op_i that he wants to visit t_i, and given the amount of traveling he does, I'm sure that he will **visit t_i**

To explain facts like these, Fiengo and May (1994) propose an operation of *vehicle change*, which in effect states that certain features are nondistinct with respect to reconstruction. The aspect of vehicle change that is relevant to the current discussion is that it establishes identity between coindexed elements with different values of the pronominal feature, as stated in (13) (cf. Fiengo and May 1994:218).²

(13) *Vehicle change*

$X_{[+pro]i}$ is a reconstruction of $Y_{[-pro]i}$.

With vehicle change, the LF representation (14), in which the name *Brown* is replaced by a coindexed pronoun, licenses deletion in (9), because the LF representation of the deleted VP is a reconstruction of the VP in the first conjunct.

² Vehicle change is also involved in establishing identity between featurally distinct but referentially identical indexical expressions, licensing deletion in examples like (i) (from Sag and Hankamer 1984; see the discussion of this point in Fiengo and May 1994:218).

(i) A: Do you think they'll like me?

B: Yes, I'm sure they will. (**like you**)

- (14) Achtenberg supports Brown_i, and he_i thinks Alioto **supports him_i** too

Likewise, in (15) vehicle change establishes identity between the pronoun *it_i* and the trace *t_i* in the antecedent VP, licensing deletion in (10).³

- (15) Albert named a country Op_i that he wants to visit t_i, and given the amount of traveling he does, I'm sure that he will **visit it_i**

Although vehicle change bleeds Condition C in the context of VP-deletion, because it establishes identity between a referring expression or \bar{A} -trace and a pronoun, it licenses deletions that are sensitive to Condition B (see the discussion of this point in Fiengo and May 1991, 1994). This is illustrated by the contrast between (16) and (17).

- (16) Rachel nominated Geoff_i because he_i asked her to.
 (17) *Rachel nominated Geoff_i because he_i couldn't.

With vehicle change, the LF representation of (16) is (18), which is well formed with respect to both Conditions B and C.

- (18) Rachel nominated Geoff_i because he_i asked her to **nominate him_i**

The LF representation of (17), however, is (19), which satisfies Condition C, but violates Condition B because the pronoun in the elided VP is bound in its minimal governing category.

- (19) *Rachel nominated Geoff_i because he_i couldn't **nominate him_i**

The importance of these facts is that they show that Condition B effects can be used as a test to determine whether a particular deletion involves vehicle change. Before applying this test to the sentences

³ See Hardt 1993 for an alternative, semantic approach to examples like (10). Observing the ill-formedness of LF representations like (12), Hardt argues that "deleted" VPs are actually proforms and that the interpretation of VP-deletion involves recovering a VP meaning dynamically from context, rather than establishing syntactic identity at LF. Sentences like (10) are acceptable because the expression in the recovered VP meaning that corresponds to the trace in the antecedent is a free variable whose interpretation is contextually determined. An important difference between this type of approach to VP-deletion and the one I have adopted here, which relies on establishing identity between LF representations, is that it does not provide a direct explanation for the sensitivity of a deleted VP to syntactic constraints. As I will show, the gaps in the deleted VPs in examples like the (a) cases of (1)–(4) are sensitive to Condition B. If Condition B is a constraint on syntactic representations, as traditionally assumed, then cases such as these raise questions for a purely semantic account of ellipsis such as the one developed by Hardt (as well as those discussed in, e.g., Rooth 1981, Dalrymple, Shieber, and Pereira 1991, and Jacobson 1992).

under investigation here, I should note that if vehicle change is a general component of the grammar of ellipsis, as claimed by Fiengo and May, its effects should be apparent in a variety of contexts. In particular, vehicle change entails that (5)–(8) are *possible* LF representations of the (b) cases of (1)–(4). If it can also be shown that (5)–(8) are the *actual* LF representations of these sentences, the analysis that I have proposed here will be confirmed: namely, that sentences of this type do not show Subjacency effects because they do not contain parasitic gaps.

3 (Non)parasitic Gaps, Strong Crossover, and Condition B

In order to present the argument, I must establish a fact about parasitic gaps. Like other types of constructions involving \bar{A} -movement, parasitic gap constructions show strong crossover effects. This is illustrated by the contrast between (20) and (21) (see Cinque 1990:150, Postal 1993:fn.14).

- (20) *This is the guy who_i they arrested before he_i realized they suspected.
- (21) This is the guy who they arrested before anyone realized they suspected.

The ungrammaticality of (20) is expected: like other \bar{A} -bound empty categories, a parasitic gap must not be bound by an expression in an argument position. In this sentence, however, it is A-bound by the pronoun *he*, as shown in (22).

- (22) *this is the guy [who_i they arrested t_i [Op_i before he_i realized they suspected e_i]]

Because parasitic gaps are sensitive to strong crossover, and assuming that strong crossover is calculated at LF (with respect to Condition C, which Chomsky (1993, 1995) has argued applies only at LF), the analysis of the (b) cases of (1)–(4) presented by Kim and Lyle and the one I have proposed here make very different predictions. If the deleted VPs in these examples contain true parasitic gaps, then sentences of this type should show strong crossover effects. If the deleted VPs contain pronouns licensed by vehicle change, however, then sentences of this type should not show strong crossover effects, but they should be sensitive to Condition B. Two sets of facts support the vehicle change analysis.

First, (23)–(25) show that sentences of this type are not sensitive to strong crossover.

- (23) Which candidate_i did Maureen vote for because he_i asked her to?
- (24) Who_i did you nominate without him_i knowing that you did?
- (25) Who_i did Marcus recommend after she_i asked him to?

Each sentence is grammatical on the reading indicated by the coindex-

ing, which is expected if their LF representations are (26)–(28), in which the elided VPs contain a pronoun instead of a parasitic gap.

- (26) which candidate_i did Maureen vote for t_i because he_i asked her to **vote for him**_i
 (27) who_i did you nominate t_i without him_i knowing that you did **nominate him**_i
 (28) who_i did Marcus recommend t_i after she_i asked him to **recommend her**_i

True parasitic gap constructions in the same contexts are not grammatical.

- (29) *Which candidate_i did Maureen vote for because he_i asked her to support?
 (30) *Who_i did you nominate without him_i knowing that you backed?
 (31) *Who_i did Marcus recommend after she_i said he owed a favor?

(29)–(31) contrast with examples in which the offending pronoun is replaced with an expression that is not bound by the *wh*-operator, which are acceptable.⁴

- (32) Which candidate did Maureen vote for because the mayor asked her to support?
 (33) Who did you nominate without anyone knowing that you backed?
 (34) Who did Marcus recommend after remembering he owed a favor?

Second, (35)–(37) demonstrate that sentences like the (b) cases of (1)–(4) are sensitive to Condition B.

- (35) *Which candidate_i did Maureen vote for because he_i wouldn't?
 (36) *Who_i did you nominate at the same time that he_i did?
 (37) *Who_i did Marcus recommend without realizing that she_i already had?

⁴ An *LI* referee questions the strength of the contrast between (29)–(31) and their counterparts in (32)–(34), claiming that the two sets of examples are equally unacceptable. Although my own research has indicated that speakers consistently detect a contrast between these examples (and, crucially, (29)–(31) are invariably rejected), it is not surprising that some speakers may find (32)–(34) degraded: constructions in which parasitic gaps are contained in tensed adjuncts are generally considered marked in comparison with constructions in which parasitic gaps occur in nonfinite adjuncts. This fact actually provides another argument against analyzing sentences like the (b) cases of (1)–(4) as parasitic gap structures. The “gaps” in these examples are contained in tensed adjuncts, yet the sentences do not show the same degree of markedness as (32)–(34).

Each of these examples is ungrammatical on the intended reading, in which the overt pronoun in the adjunct is coindexed with the *wh*-phrase. This is expected if their LF representations are as shown in (38)–(40), which violate Condition B.

- (38) *which candidate_i did Maureen vote for t_i because he_i wouldn't **vote for him**_i
 (39) *who_i did you nominate t_i at the same time that he_i did **nominate him**_i
 (40) *who_i did Marcus recommend t_i without realizing that she_i already had **recommended her**_i

If the pronoun is replaced by an expression that is not interpreted as coreferential with the object of the deleted VP, then the examples become perfectly acceptable, as expected.

- (41) Which candidate did Maureen vote for because Louis wouldn't?
 (42) Who did you nominate at the same time that Willie did?
 (43) Who did Marcus recommend without realizing that Charles already had?

The conclusion to be drawn from these facts is that the ‘‘gap’’ in sentences like the (b) cases of (1)–(4) is not a gap at all, but rather a pronoun, licensed by vehicle change. An important potential objection to this analysis is raised by Kim and Lyle (1995). They point out that changing the featural content of an \bar{A} -trace from [– pro] to [+ pro] generates a [+ pro] empty category—that is, *pro*—yet *pro* is otherwise unattested in English. Even allowing for the possibility of *pro* in English (see Cinque 1990), this would be an undesirable result. *Pro* is a syntactic variable; therefore, we would incorrectly predict that non-parasitic gaps should show strong crossover effects (Cinque 1990, McCloskey 1990).

In fact, within the set of assumptions I have adopted here, the vehicle change analysis does not require the introduction of *pro* into the LF representations of these constructions. This is because reconstruction—the relation that licenses VP-deletion—is a formal identity relation between phrase markers, not a derivational, structure-building procedure (see Fiengo and May 1994:288). Vehicle change should be understood not as a type of coercion operation that transforms a [– pro] empty category into a [+ pro] empty category, but rather as a relation that establishes identity between two expressions in a syntactic representation that differ in featural content but agree in indexical value. Within this framework, the reconstructed pronouns in LF representations like (5)–(8) are lexically nondistinct from their overt counterparts and, as verified by the data discussed in this section, are subject to exactly the same distributional constraints.

4 Conclusion

Supporting my claims with evidence from strong crossover and Condition B effects, I have argued that the absence of Subjacency violations

in the (b) cases of (1)–(4) indicates that the deleted VPs in sentences of this type do not contain parasitic gaps, but rather pronouns that are interpreted as bound variables. These are not variables in the syntax (i.e., resumptive pronouns, as suggested in Fiengo and May 1994); if they were, they would exhibit strong crossover effects, as shown by McCloskey's (1990) work on Irish. The pronouns in the LF representations of the (b) cases of (1)–(4) are ordinary English pronouns, equivalent in all relevant respects to the pronouns in their nonelided counterparts.

If sentences like the (b) cases of (1)–(4) do not contain parasitic gaps, however, then they do not support the conclusion that some parasitic gap chains must be licensed at LF, and so do not remove the challenge presented by parasitic gaps to the hypothesis that grammatical constraints are imposed only at the interface levels. Although there might be arguments in favor of LF licensing of parasitic gaps (see, e.g., Kim and Lyle's (1995, 1996) discussion of multiple *wh*-questions), nonparasitic gaps do not provide one of them.

Finally, nonparasitic gaps provide additional empirical support for an operation of vehicle change. The fact that these sentences do not exhibit strong crossover effects, but are sensitive to Condition B, shows that a pronoun and a coindexed \bar{A} -trace must count as identical with respect to licensing VP-deletion, as argued by Fiengo and May (1991, 1994). More generally, if Condition B is a constraint on the distribution of pronominal expressions in an LF representation, then nonparasitic gaps provide additional support for the position that an elided VP is fully syntactically represented at LF.

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OUTPUT CONSTRAINTS AND
PROSODIC CORRESPONDENCE IN
CHAMORRO REDUPLICATION

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The empirical focus of this squib is the interaction between stress and infixing suffixal reduplication in the Austronesian language Chamorro, spoken on Guam and the Northern Mariana Islands. All nonreduplicative suffixes cause stress shift in Chamorro, but the location of main stress is identical in items with infixing suffixal reduplication and in the morphologically related base. Interestingly, this prosodic behavior is observed when the base of reduplication is an independent word and when it is a bound root. The differential prosodic behavior of nonreduplicative suffixes and the infixing suffixal reduplicant follows from constraints previously proposed in the Optimality Theory (OT) literature. In contrast, the identical prosodic behavior of infixing suffixal reduplication with free bases and bound roots is shown to have significant implications for the form of constraints on the output in the correspondence models of OT.

The models of OT incorporating Correspondence Theory take two different views on the form of constraints on the output. In one class of models, output constraints determine the optimal candidate by evaluating the set of output candidate structures (McCarthy and Prince 1995). In the other class of models, output-output constraints compare a given candidate with the optimal output form of the morphologically related independent word (Benua 1995, McCarthy 1995, Kenstowicz 1996). On the one hand, I show in this squib that output constraints on reduplication capture the prosodic behavior of infixing suffixal reduplication with free bases and bound roots. On the other hand, I show that reduplicative output-output constraints are unable to account for reduplication with bound roots. Consequently, the data

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