

1986

Donkey-Parasites

Ur Shlonsky

Massachusetts Institute of Technology

Follow this and additional works at: <https://scholarworks.umass.edu/nels>



Part of the [Linguistics Commons](#)

Recommended Citation

Shlonsky, Ur (1986) "Donkey-Parasites," *North East Linguistics Society*. Vol. 17 , Article 14.

Available at: <https://scholarworks.umass.edu/nels/vol17/iss2/14>

This Article is brought to you for free and open access by the Graduate Linguistics Students Association (GLSA) at ScholarWorks@UMass Amherst. It has been accepted for inclusion in North East Linguistics Society by an authorized editor of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.

DONKEY-PARASITES

Ur Shlonsky

Massachusetts Institute of Technology

1

In this paper, I would like to consider a new way of looking at parasitic-gap constructions of the sort illustrated in (1).¹

(1) he's a person that anyone who talks to p usually likes e

I begin with the observation that sentences such as (1) resemble, in certain respects, the type of sentence illustrated by example (2) below and commonly referred to as a 'donkey sentence'.²

(2) anyone who owns a donkey feeds it tofu.

I then suggest that one of the puzzling properties of (1) can be accommodated by carrying-over the analysis for 'donkey sentences' in terms of *Indirect Binding*, proposed in Haïk (1982), to the type of parasitic-gap constructions exemplified by (1).

More specifically, I try to show that while the gaps e and p in (1) are variables bound by operators in LF, they are also *indirectly*-bound by the wide-scope quantifier, *anyone*, at S-structure. At that level of representation, then, (1) incorporates a 'donkey'-sentence embedded within a relative clause, where p plays the role of the indefinite NP, a *donkey* and e the role of the bound pronoun, *it*.

2

Chomsky (1986) analyzes parasitic gap constructions as arising from the composition of two chains at S-structure.

"If $C = (\alpha_1, \dots, \alpha_n)$ is the chain of the real gap and $C' = (\beta_1, \dots, \beta_m)$ is the chain of the parasitic gap, then the "composed chain" $(C, C') = (\alpha_1, \dots, \alpha_n, \beta_1, \dots, \beta_m)$ is the chain associated with the parasitic gap construction and yields its interpretation." (p.63)

In the *Barriers* system, both the parasitic gap and the 'real' gap project operators with which they form (A')-chains. In order for the two chains to compose, they must be "sufficiently close" to one another. The basic idea of Chomsky (1986) is that locality conditions can be uniformly stated in terms of barriers. With respect to composed chains, the locality condition is very strict: No barrier can intervene between the head of the parasitic chain, i.e., its operator and the tail, i.e., the gap of the 'licensing' chain. In Chomsky's words,

"...the head of C' must be 0-subjacent to the final element of C . Thus, β_1 must be 0-subjacent to α_n ." (p. 65)

Consider, now, the relevant aspects of the S-structure representation of (1) which are given in (3).

(3) he is a person Op_j that [S[NP_i anyone [who_i+Op'_j [S t_i talks to [NP_j ρ]]]] usually likes [NP_j e]]

Notice that Op' is contained within a subject NP which is not L-marked, hence a barrier. Furthermore, the S node dominating the sentential subject containing Op' is also a barrier, by inheritance from NP. Thus Op' in (3) is separated from e by two barriers and the parasitic chain cannot compose with the licensing chain. This undesirable result cannot be remedied by allowing Op' to adjoin to the subject NP which contains it in (3), because adjunction to arguments (i.e. NP's and CP's) must be ruled out in the *Barriers* system for other reasons, discussed at length in that monograph.

While various ad-hoc maneuvers can be made to remedy this unwanted consequence, and perhaps a more principled modification of the *Barriers* system can yield a more satisfactory account of these parasitic gap constructions, under the assumptions made in Chomsky (1986), there doesn't appear to be any obvious or principled way for the operator associated with the parasitic gap in (3) to meet the 0-subjacency requirement on chain composition.

This recalls another problem, that presented by 'donkey' sentences, exemplified in (2), to which I now turn.

The sentence in (2) is ambiguous. Under one interpretation, the pronoun *it* freely refers. For instance, it could be disjoint in reference from the NP *a donkey* and refer to *a monkey* as in (4a) or it can be "accidentally" co-referential with *a donkey*, in which case sentence (2) may mean (4b). But what is syntactically puzzling about 'donkey' sentences is that there is a second reading, namely one where the pronoun *it* is taken as a variable bound by *a donkey*, that is, where the value assigned to *it* varies with the choice of donkey. The bound interpretation is given in (4c).

- (4) a. anyone who owns a donkey feeds his monkey tofu
 b. There is a donkey 'Chiquita' such that anyone who owns 'Chiquita' feeds 'Chiquita' tofu
 c. $A_x A_y ((x \text{ is a person} \ \& \ y \text{ is a donkey} \ \& \ x \text{ owns } y) \text{ ---} \rightarrow x \text{ feeds } y \text{ tofu})$

The puzzle here is first that the indefinite acquires universal quantificational force and second that albeit appearing in a position embedded within a relative clause and thus failing to c-command the pronoun, it nevertheless binds it. What is crucial in this puzzle and the key to its resolution is that the interpretation of the pronoun as a bound variable is obtained only when the head of the relative clause has quantificational properties. This is illustrated in (5), the '*' on (5d) indicating that the bound reading is unavailable.

- (5) a. anyone who owns a donkey rides it
 b. some people who own a donkey ride it
 c. people who own a donkey ride it
 d. *the men who own a donkey ride it

The proposal made by Haïk is that the quantificational head of the relative clause, *anyone*, which c-commands the indefinite NP *a donkey*, indirectly-binds it, where indirect-binding is construed as a sub-case of binding, occurring at S-structure. Going back to the bound reading of donkey-sentences given in (4c), it is argued that the universal force of the indefinite is acquired by its being indirectly-bound by the quantifier or, more precisely by the trace of the operator associated with the quantificational head. In the absence of a scope-bearing NP head, the indefinite fails to have quantificational force, as shown by (5d).

Haïk also shows that the trace of the relative operator must c-command the indefinite, as the following sentences illustrate. (Haïk's (79))

- (6) a. Some people who kicked a donkey hated it
 b. ?*Some people who a donkey kicked hated it

In (6b) the trace of the relative operator does not c-command the indefinite as it is in the direct object position while the indefinite is in the

subject position. Since c-command is a condition *sine qua non* for any kind of binding relation, the indefinite in (6b) cannot be indirectly bound.

The bound reading of the pronoun *it* in (2) is obtained through indirect binding by the subject. In (2), [_{NP}*anyone who owns a donkey*], a quantificational phrase, has the pronoun within its scope and thus may indirectly bind it.

In Haïk's system, when one NP is interpreted as occurring within the scope of another NP, it is scope indexed with that NP. The S-structure representation of (2) is given in (8), following the notational conventions in (7).

- (7) **Scope Indexing** (Haïk, *op. cit.* p.197)
- a. If N_i is to be interpreted as in the scope of NP_j , then append $/j$ to the index of NP_i ; that is, a structure containing $NP_{i/j}$ is unambiguously interpreted with NP_i as in the scope of NP_j , i/j is a referential index.
 - b. Scope is transitive; therefore, if NP_i is construed as in the scope of $NP_j(NP_{i/j})$ and NP_j as in the scope of $NP_k(NP_{j/k})$, then $NP_{i/j/k}$.

- (8) [_{NP_{i(j)}} anyone [who [_S $t_{i(j)}$ owns [_{NP_{j/i}} a donkey]]]] feeds $it_{j/i}$ to fu^3

The NP *a donkey* is scope-indexed as $NP_{j/i}$. Since the pronoun *it* is coindexed with $NP_{j/i}$, it is automatically rewritten as $it_{j/i}$. Furthermore, the trace of the indirect-binder receives the referential index of the NP it has in its scope; thus it becomes $t_{i(j)}$. Finally, the entire NP has the same referential index as the *wh* - trace.

What is important here, is that the system of indirect binding raises, so to speak, the index of the indefinite to a position from which it c-commands and hence may bind the pronoun.

4

It is well known that parasitic-gap constructions of the type given in (1) also require that the head of the relative clause which constitutes the sentential subject in which the alleged parasitic-gap lies embedded be possessed of quantificational properties.⁴ This fact is illustrated in (9).

- (9) ?he's a person that anyone who talks to **p** usually likes **e**
 some people who talk to **p** usually like **e**
 people who talk to **p** usually like **e**
 *the men who talk to **p** usually like **e**

While many treatments of parasitic gaps attach little or no importance to this restriction, I think that this property provides the link between parasitic gaps and donkey sentences.

Suppose, then, that indirect binding effects (1). Putting aside some details, the S-structure representation of (1), is given in (10).

(10) he is the person Op_j that [NP $i(j)$ anyone [who_i+Op_j [S $t_i(j)$ talks to
[NP $_j/i$ p]]]] usually likes [NP $_j/i$ e]

In (10), *anyone*, or rather, its trace, indirectly-binds p and exactly as in Haik's analysis of (8), the index associated with p is raised high enough so as to c-command and bind e . Indirect binding thus ensures that both gaps bear the same index.

If the trace of *who_j* indirectly binds p in (10), we expect indirect binding to be unavailable when the trace does not c-command p . Moreover, if indirect binding is the mechanism which licenses p at SS, the absence of c-command of p by the trace should lead to ungrammaticality. (11a) below contrasts with (11b); in the former the trace of the relative operator c-commands p whereas in the latter, it does not.⁵

- (11) a. he's a guy that anything you say to p annoys e
b. *this is the kind of thing that any person who you say p
to will appreciate e

The representation given in (10) also includes two operators, the licensing operator, OP., and OP', the operator associated with the parasitic gap, as in Chomsky (1986). (10) is derived as follows. *Wh*-movement creates two gaps. e is associated with the highest operator while p is bound by a null operator. The two A'-chains play distinct roles at S-structure and in LF. At S-structure, they license the two gaps qua gaps. At LF, the operators must each bind a variable. Nothing, however, prevents the two gaps from being also indirectly-bound at S-structure. Crucially, though, indirect binding of e and p must not take place in LF, for otherwise, both gaps will be (indirectly)-bound and not be taken as free variables and the operators will quantify vacuously. What needs to be emphasized, w.r.t. (10), then, is that operator-variable binding relation is not checked until LF, upon which the indirect-binding indices have been eliminated.

Suppose, then, that we construe indirect-binding as a subcase of **Affect- α** in the sense of Lasnik and Saito (1984) and allow the indices of indirect binding to delete freely. At LF, then, (10) will differ from (3) only in that QR has applied. Only the indirect-binding indices may be deleted; the referential ones remain as they are required for the proper interpretation of the sentence. Similarly, in 'donkey'-sentences, indirect-binding must be invisible to the binding theory. Otherwise, the indefinite NP would be bound, in violation of condition C and the pronoun bound

in violation of binding condition B. While Haïk (1984) merely stipulates this, we can derive the deletability of indirect binding indices from the notion *Affect- α* .

By construing the licensing mechanism for sentences such as (1) at S-structure as involving indirect-binding, we are equipped with a principled way of raising the index of the parasitic gap high enough so that it may emerge out of the relative clause and compose with the chain generated by the licensing gap.

If this approach is on the right track, it is tempting to view the "raising" of indices of indirect binding as a case of syntactic movement. Indirect binding is, perhaps, reducible to null operator movement, to a subcase of *move- α* . The evidence is far from clear and speakers' judgments vary considerably but a more or less consistent pattern emerges w.r.t. the data in (12). (12a), where the indefinite is merely embedded, is acceptable while the other cases in (12) display the degradation familiar from subjacency effects. If the mechanism by which indefinites acquire their quantificational force is syntactic movement, sensitivity to subjacency is to be expected.

- (12) every man who
- a. decided to buy a donkey, ended up beating it
 - b. ??wondered whether to buy a donkey, ended up beating it
 - c. *wondered who bought a donkey, ended up beating it
 - d. *knew women who bought a donkey, ended up beating it

5

I have tried to show that we can capitalize on the observed similarities between parasitic gaps and 'donkey' sentences and invoke indirect binding as a licensing mechanism for the former. In the remainder of this paper, I would like to present evidence which suggests that indirect binding is not merely a reasonable approach but in fact a necessary mechanism for licensing a particular kind of parasitic gaps. The Hebrew data, which I discuss below, is designed to show that a parasitic gap is licensed even in the absence of a 'licensing' chain with which its operator can compose.

In Hebrew, a language where resumptive pronouns are licit in short relative clauses, e.g. (13), a pronoun can appear in the place of the 'licensing' gap in a parasitic-gap construction such as (14).⁶

- (13) ze ha-baxur Se-Rina ohevet (**oto**)
this the-guy that-Rina loves (him)
 'this is the guy that R. loves'

575

- (14) ze ha-baxur Se-kol mi Se-pogeS ma'arix (oto)
this the-guy that-any who that-meets respects (him)
 'this is the guy that anyone who meets respects'

Interestingly, a resumptive pronoun in the place of a licensing gap in 'adjunct' parasitic gaps is not allowed, as the contrast between (15a) and (15b) demonstrates.

- (15) a. *ze ha-baxur Se-niSakti oto mibli lehakir
this the-guy that- kissed+1ms him without to know
 this is the guy that I kissed without knowing
- b. ze ha-baxur Se-niSakti mibli lehakir
this the-guy that-kissed+1ms without to know

I will first present an argument to the effect that in relative clauses employing the resumptive strategy, there is no operator with which the pronoun is associated (at least at the levels of S-structure and LF) and hence, no A'-chain. I will then argue that if, in fact, there is no such operator present in the matrix COMP position at S-structure in (13), then the parasitic gap in (14) cannot be licensed by 'chain-composition' since there is no 'licensing chain', indeed, no chain.

Consider, then, *weak crossover* facts from Hebrew relative clauses. There is a clear contrast between (16a) with the gap and (16b) with the resumptive pronoun: Weak X-over effects are sensed only in (16a). (16b) is fine with the given indexing.

- (16) a. ?*ze ha-baxur Se-im-o_i ohevet t_i
this the-guy mother-his loves
 'this is the guy that his_i mother loves t_i
- b. ze ha-baxur Se-im-o_i ohevet oto_i
this the-guy mother-his loves him

A similar effect can be noticed in English such-that constructions, as shown, for instance, by the contrast in (17).

- (17) a. ?*he's a guy that his_i mother loves t_i
 b. he's a guy such that his_i mother loves him_i

A straightforward way of accounting for these facts is available if we assume that when the resumptive strategy is employed, an operator is not projected, at least not in the syntactic component of the grammar.

This claim is supported by the absence of subjacency effects in relative clauses when resumptive pronouns are employed. In (16) below, a gap inside a complex NP violates subjacency. When a resumptive pronoun is employed in place of a gap, the sentence is acceptable.

- (18) ze ha-baxur Se-pagaSti iSa Se-ahava *e / $\sqrt{\text{oto}}$
*this the-guy that-met+1ms woman that-loved *e / $\sqrt{\text{him}}$*
 'this is the guy that I met the woman who loved'

It seems reasonable, then, to assume that when resumptive pronouns are used, no movement takes place. In parallel fashion, suppose that weak crossover effects are suspended when the resumptive strategy is used because an operator/variable relationship is not established. Both pronouns in (17b) may be freely co-indexed.⁷

There is another case in which the interpretation of a relative clause with a resumptive pronoun differs from that of a relative clause with a *wh*-trace. Of the pair of sentences in (19), the first is ambiguous while the second is not. (19a) can have either of the two meanings (i) and (ii) while (19b) has only the meaning in (i).⁸

- (19) a. ha-iS Se-kol iSa ohevet \bar{t} iSlax la tmuna
the-man that-every woman loves will send to her a picture
 'the-man that-every woman loves will send her a picture'
- b. ha-iS Se-kol iSa ohevet **oto** islax la tmuna
the-man that-every woman loves him will send to her a picture
- (i) there is one man that every woman loves and he will send her a picture
- (ii) for each woman there is a man that she loves and he will send her a picture

Under Haïk's scope-indexing mechanism, the ambiguity of (19a) is accounted for by allowing the operator in COMP, which binds the trace, to be coindexed with the containing NP. Thus, the reading of (19a) where *every woman* takes scope over *the man* - reading (ii) - is given in (20a) where the trace appears in the scope of *every woman* and via the operator in COMP binding it, the containing NP is re-written as occurring within the scope of *every woman*. The unavailability of reading (ii) for (19b) will follow if we assume that there is no operator in COMP at the relevant level to transmit its index to the containing NP. Thus *every woman* in (19b) cannot take scope outside its minimal clause, as shown in (20b).

- (20) (a) [the man [[op_{i/j} that [every woman]_j loves $\bar{t}_{i/j}$]]]_{i/j}
 (b) [the man [[that [every woman]_j loves **him**_{i/j}]]]

To recapitulate, I have tried to show that resumptive pronouns are not associated with chains. There must, then, be some other means, which do not involve chains, to license a parasitic gap construction such

as (14), where a resumptive pronoun appears in the position of the licensing gap. Such means are afforded, I have tried to argue, by indirect binding, operative at S-structure. The gap is treated as the equivalent of the indefinite in donkey-sentences, indirectly-bound by the scope-bearing head of the relative clause and the (resumptive) pronoun is construed as a bound variable.

6

To conclude, in this talk I have made use of Haïk's notion of indirect binding to accommodate a problematic class of parasitic gap constructions. Furthermore, I have tried to show that a certain fragment of Hebrew data supports indirect binding as an independent licensing mechanism. The analysis I have presented has consequences for a strong version of the autonomy of syntax thesis since the semantical properties of donkey sentences and parasitic gaps are rather different, yet both constructions are subject to a similar syntactic treatment.

APPENDIX: The *Vacuous Movement Hypothesis* and Indirect Binding

The *Vacuous Movement Hypothesis*, (VMH), is invoked in Chomsky's (1986) account of parasitic gaps to account for the contrast between (i) and (ii) below, (Chomsky's (134a,b)). In (i), the relative operator may remain *in-situ* until LF, thereby allowing the parasitic operator to move into [SPEC/CP] before SS. This option is unavailable for the relative operator in (ii), since movement of a VP-internal element into [SPEC/CP] is not vacuous.*

- (i) he's a man that everyone who gives presents to **p** likes **e**.
- (ii) *this is a book that any man to whom we'll give **p** will like **e**.

Sentence (11a), repeated below, is a counterexample to the VMH, since it is acceptable despite the fact that the relative operator must move in the syntax, as it originates within a position of a dative complement.

- (11a) he's a guy that anything you say to **p** annoys **e**

Chomsky also cites the following sentence, marking it ungrammatical: (=134c)

- (iii) he's a man that any present they'll give to **p** will please **e**.
- However, (iii) is equivalent, in relevant structure, to (11a), which speakers find acceptable - to the degree that parasitic gap constructions of this form are at all acceptable. Moreover, (iii) is better than (ii).

These contrasts cannot be captured by the VMH. An analysis which attempts to reduce these contrasts to the absence and presence of c-command relations, as in the text, fares no better since the trace c-commands **p** in the ungrammatical (ii). What seems to be relevant to these contrasts is the relation of linear precedence. In all the good cases

(i.e., (11a), (i)) the trace of the quantifier precedes *p* whereas it follows it in the less acceptable examples.

We can still maintain that indirect binding is involved in these cases if we incorporate the notion of 'precedence' into the definition of binding. That such a move may be independently necessary is argued for in Barss and Lasnik (1986).

If an indirect binder must not only c-command but also precede its bindee, we can readily explain why donkey-anaphora is unavailable with postposed subjects in Italian.[†] In (v) below, with the subject NP *ogni uomo che ama una donna* having undergone 'free inversion', *il suo sorriso* cannot have the interpretation of being bound to *una donna*.

(iv) ogni uomo che ama una donna_i ama il suo sorriso_i
'every man who loves a woman loves her smile'

(v) *ama il suo_i sorriso ogni uomo che ama una donna_i

Nothing, however, prevents *il suo sorriso* from being linked to a name such as *Maria*. As is expected, (vi) is fine.

(vi) ?ama il suo_i sorriso ogni uomo che ama Maria_i

FOOTNOTES

1 I am grateful to R. Larson for suggesting this topic for investigation and for discussions and comments on various drafts. Thanks to H. Lasnik for detailed comments on an earlier draft. Thanks also to A. Barss, M. Browning, N. Chomsky, J. Higginbotham and R. Kayne for useful discussions. It goes without saying that no one but me is responsible for errors and omissions.

2 This observation is originally due to Richard Larson (p.c.). For recent discussions of 'donkey'-sentences see Haïk (1984), Heim (1982), Reinhart (1986) among many others.

3 The parentheses indicate that *j* is to be taken as visible not for direct binding, but only for indirect binding. This coindexing is permitted by the following convention:

$$NP_i \rightarrow NP_{i(j)} \text{ iff } NP_i \text{ has scope over } NP_j$$

4 See, e.g., Cowper (1985).

5 See the Appendix for discussion of the relevance of these sentences to Chomsky's *Vacuous Movement Hypothesis*

6 These facts and the observations which accompany them are due to Sells (1984). Resumptive pronouns in relative clauses are discussed in Borer (1984).

7 One may assume, with Chomsky (1982), that the relative clause is predicated of its head at a level of representation LF' and that the output of "predication" feeds into the semantic component of the grammar. I will not pursue the interesting question of how relative clauses with resumptive pronouns are interpreted. For some discussion, see Doron (1982), Sells (1984), among others.

8 See Doron (1982) for a presentation and discussion of these facts

FOOTNOTE TO APPENDIX

† I am grateful to Luigi Rizzi for discussion of these facts.

* See, for discussion, Chomsky p. 58 ff.

REFERENCES

- Chomsky, N., (1986) Barriers, MIT Press, Cambridge, Ma.
- Barss A. and H. Lasnik, (1986) 'A Note on Anaphora and Double Objects', LI 17.2
- Borer, H., (1984), 'Restrictive Relatives in Modern Hebrew' NLLT 2 pp. 219-260
- Cowper, E., (1985) 'Parasitic Gaps, Co-Ordinate Structures and the Subjacency Condition, NELS 15
- Doron, E., (1982) 'On the Syntax and Semantics of Resumptive Pronouns' Texas Linguistic Forum, 19.
- Haïk, I. (1984) 'Indirect Binding', LI 15.2
- Heim, I., (1982), 'The Semantics of Definite and Indefinite Noun Phrases', Phd diss., U.Mass.Amherst
- Reinhart, T., (1986) 'Specifier and Operator Binding' to appear in Meulen & Reuland, (eds.) The Representation of Indefinites MIT press, Cambridge
- Sells, P., (1984), 'Syntax and Semantics of Resumptive Pronouns' Phd. Diss. U. Mass, Amherst

