

THE DERIVATION OF A RELATIVE INFINITIVE CONSTRUCTION

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The purpose of this investigation is to examine the properties and derivation of the construction exemplified by the sentences in (1), in particular, the deletion rule apparently operating to produce sentences like (1b-1d).

- 1a. John brought a chair for Mary to sit on.
- 1b. John brought a deck of cards to play with.
- 1c. John brought a puzzle to amuse himself with.
- 1d. John brought a punching bag to vent his spleen on.

This construction is of interest for at least the three following reasons. First of all, as I shall argue in Section 1, the rule which apparently operates to produce such structures seems to provide a counterexample to Ross' Complex Noun Phrase Constraint (CNPC) in that it deletes an element over a variable from a clause in a complex NP.. This may seem to be a pseudo-problem since this rule looks like simply a sub-case of Super-Equi (SE), which has been observed to flaunt island constraints. However, as I argue in Section 2, despite many striking similarities, this rule cannot be a sub-case of SE. Both rules are exempt from certain island constraints, but under different conditions. Other differences are also examined. Third, even if this rule should ultimately turn out to be analysable as a sub-case of SE (and an attempt to do this is made in Sec. 2), the derivation of the construction in (1) is subject to a variety of unpredicted constraints (detailed in Section 3), several of which apply only when relevant identity conditions hold between the head and some element in the highest clause within the complex NP. That is, the constraints do not hold across clause boundaries inside the island.

Section 1. The deletion rule operating to produce sentences like (1b-1d) has several properties worth noticing. First of all, it is an identity deletion, as indeed (1c) and (1d) suggest. It is not a free deletion of an unspecified or indefinite NP as in John was hurt [by Indef] or The children have eaten [indef]. If it were, sentences (2a) and (2b) would be equivalent to (1b), which they are not, and (2d,e) would be as grammatical as (2c), and (2g) as grammatical as (2f,h).

- 2a. John brought a deck of cards for someone to play with.
- 2b. John brought a deck of cards to be played with.
- 2c. It is hard for one to accept that.
- 2d. \*John brought a book for one to read.
- 2e. \*Joan brought a book to amuse oneself with.
- 2f. Joan brought a toy that it will be easy for one to amuse oneself with.
- 2g. ?Joan brought a book that it will be easy to amuse oneself with.
- 2h. One may bring a book that it is easy to amuse oneself with.

Rather, (1b) asserts or implies that it is John who (possibly among others)<sup>1</sup> will play with the cards, while (2a) suggests that John will not play, and (2b) is non-committal. Sentence (2d) shows that an indefinite NP is not as acceptable in this construction as elsewhere, and sentences (1c) and (2e-h) show that the deleted NP must have a coreferential antecedent.

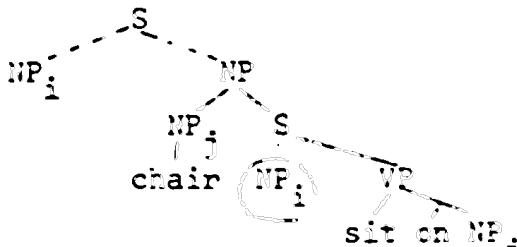
Second, like the Super-Equi-NP-Deletion discussed by Grinder (1970), this deletion operates over a variable, as shown by (3) and (4).<sup>2</sup>

- 3. John brought a toy that it was obvious it would be easy to amuse himself with.
- 4. John thought about the possibility of it being obvious that it would be necessary to bring something it would be legal to amuse himself with.

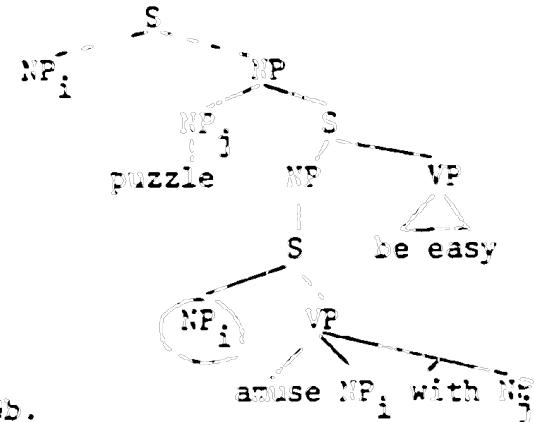
Grinder claimed that Super-Equi (SE) and Equi (E) were the same rule, Equi being merely the sub-case of application into an immediately commanded complement. Like E/SE, this deletion is obligatory when applying into an immediately commanded clause,<sup>3</sup> but optional if applying into a more remotely commanded clause, as shown by the ungrammaticality of (5) and (6) compared to (7) and (8).

- 5a. \*I know you'll bring a chair for you to sit on.
- 5b. \*I know you'll bring a chair for yourself to sit on.
- 5c. \*I know Mary will bring a puzzle for her to amuse herself with.
- 5d. \*I know Mary will bring a puzzle for herself to amuse herself with.
- 6a. \*John<sub>i</sub> hoped him<sub>i</sub> to win.
- 6b. \*John<sub>i</sub> hoped himself<sub>i</sub> to win.
- 7a. John brought a book which it will be easy (for him) to read.
- 7b. John brought a toy which it will be fun (for him) to amuse himself with.
- 8a. I know you'll think it is unnecessary (for you) to bring a chair.
- 8b. I know Mary'll think it is unnecessary (for her) to kill herself.

Third, assuming that this deletion rule operates on structures like (9) to delete the circled NP, it operates to delete something from a structure of the ordinarily inviolate type which Ross (1967) termed an island, and therefore the rule shall be called Anchitka Deletion (AD).



9a.



9b.

Whether this deletion therefore provides a counterexample to Ross' Complex Noun Phrase Constraint (CNPC) by not yielding an ungrammatical sentence, is not, however, self-evident. The CNPC says that no element in an S dominated by a NP with a lexical head noun may be chopped from that S by a rule which must refer to an element outside the island, and so would seem to prohibit deletions of the type characterized by (9). However, Ross observes at the end of Chapter 6 that not all rules which delete constituents over a variable are constrained by the constraints on variables, that rules which delete backwards into a subordinate clause, as well as forwards more or less freely (e.g. many kinds of pronominalization and identity of sense deletions in many languages) are not subject to the constraints, that only unidirectional deletion rules are subject to them.<sup>4</sup> Thus, whether or not AD is a counterexample to Ross' formulation of island constraints depends, strictly speaking, on whether or not it is a unidirectional rule. The answer to that is not as clear as it could be, as differing judgements on the sentences of (12) testify. These contrast to the clear reactions to Equi and SE sentences in (10) and (11) with parallel structural relations.

One of Grinder's arguments that Equi was a subcase of SE was that the same constraints hold for backwards application of SE as for backwards Equi: the deletee may precede the controller only if it is commanded by and does not command the controller. Thus, parallel to (10), where Equi

has applied, is (11) with SE.

- 10a. Talking to himself<sub>i</sub> soothes John<sub>i</sub>.
- 10b. \*Talking to himself<sub>i</sub> proves that John<sub>i</sub> is crazy.
- 10c. That John<sub>i</sub> talks to himself proves that he<sub>i</sub> is crazy,
- 11a. That amusing himself<sub>i</sub> is easy is no comfort to John<sub>i</sub>.
- 11b. \*That amusing himself<sub>i</sub> is easy proves that John<sub>i</sub> is simple.
- 11c. That it is easy for John<sub>i</sub> to amuse himself<sub>i</sub> proves that he<sub>i</sub> is simple.

Grammaticality judgements on AD sentences with parallel structural relationships between controller and deletee are exemplified by (12).

Most informants found (12a) and (12d) as unacceptable as (13), where the controller does not command the deletee, and pronominalization would be as bad as deletion.

- 12a. %A talking mouse to amuse himself<sub>i</sub> with was given to John<sub>i</sub>.  
by the esteemed Senator from Oklahoma.
- 12b. A talking mouse to amuse himself<sub>i</sub> with came to/for John<sub>i</sub>  
today as a gift from my Uncle Harry.
- 12c. Something to amuse himself<sub>i</sub> with seems to be just what John<sub>i</sub>  
needs.
- 12d. %Sally gave a toy to amuse himself<sub>i</sub> with to her cousin<sub>i</sub> who was  
in the Marines.
- 13. \*A talking mouse to amuse himself<sub>i</sub> with said that John<sub>i</sub> would  
never be a poet.

There was wide variation on (12b) and total agreement that (12c) was grammatical. I know of nothing which predicts that (12b,c) should be acceptable and (12a,d) unacceptable. The ungrammatical (12a) and the grammatical (12c) both have earlier stages in their derivations which meet the structural description for forwards deletion; conceivably (12d) does--cf (14):

- 14. Sally gave her cousin<sub>i</sub> who was in the Marines a toy to amuse  
himself<sub>i</sub> with.

Still, one cannot explain the ungrammaticality of (12d) with any hocus-pocus about relative ordering of AD and some rule of dative movement.

Notice that structures like (12d) are ungrammatical even if AD hasn't applied, as in (15a), even though AD is not obligatory if the deletee precedes the controller, as (15b) shows. The ungrammaticality of (15a)

is as unpredicted by the conditions on pronoun-anterior relationships as the ungrammaticality of (12d). In (15a), the pronoun him precedes but does not command the anterior cousin, which does command the pronoun, so (15a) should be all right. Sentence (15c) shows merely that the construction in question can occur as a verb-adjacent direct object in a sentence with a dative phrase.

- 15a. \*Sally gave a toy for him<sub>i</sub> to amuse himself<sub>i</sub> with to her cousin<sub>i</sub> who was in the Marines.
- 15b. A talking mouse for him<sub>i</sub> to amuse himself<sub>i</sub> with was given to John<sub>i</sub> by the esteemed Senator from Oklahoma.
- 15c. Sally gave a toy for me to amuse myself with to her cousin who is in the Marines.

The derivation of sentence (12b), however, apparently requires that AD apply backwards; the deep order of the deleted subject of amuse and the object of to/for is presumably the same as their surface order.<sup>5</sup> If we take this as evidence that AD is a bi-directional rule, and the sentences of (16) provide further evidence that AD can apply backwards, then we should not expect it to obey island constraints.

- 16a. That a toy to amuse himself<sub>i</sub> with might be necessary surprised John<sub>i</sub>.
- 16b. That a toy to amuse himself<sub>i</sub> with may be necessary suggests that John<sub>i</sub> is important.

Significantly, however, it does not violate the Coordinate Structure Constraint (CSC), the Sentential Subject Constraint (SSC) or the Left Branch Constraint (LBC) with abandon. Like Super-Equi, it may violate one clause of the CSC, the one which forbids the removal of part of a conjunct, as (17b) and (18b) illustrate, but only if the conjuncts are adjuncts to different NPs or verbs--if AD and SE apply to conjuncts which are adjuncts to the same node, the resulting sentences, as in (17d) and (18d) are ungrammatical. And if SE or AD applies to delete a complete conjunct, the result, as in (17ghi) and (18ghi), is again ungrammatical.

- 17a. I brought a toy for me to amuse myself with and a box of candy for you to eat.
- 17b. I brought a toy to amuse myself with and a box of candy for you to eat.
- 17c. I brought a toy for Bill to fix and for me to amuse myself with.
- 17d. \*I brought a toy for Bill to fix and to amuse myself with.

- 17e. John brought a chair for him and me to sit on.
- 17f. John brought a chair for me and him to sit on.
- 17g. \*John brought a chair for and me to sit on.
- 17h. \*John brought a chair and (for) me to sit on.
- 17i. \*John brought a chair for me and to sit on.
- 18a. John thought it would be possible for him to wash himself in Lake Erie and necessary for someone to give him permission to.
- 18b. John thought it would be possible to wash himself in Lake Erie and necessary for someone to give him permission to.
- 18c. John thought it would be possible for him to wash himself in lake Erie and for Sam to waterski on it.
- 18d. \*John thought it would be possible to wash himself in Lake Erie and for Sam to waterski on it.
- 18e. John thought it would be possible for him and Jan to swim in Lake Erie.
- 18f. John thought it would be possible for Jan and him to swim in Lake Erie.
- 18g. \*John thought it would be possible for and Jan to swim.
- 18h. \*John thought it would be possible for Jan and to swim...
- 18i. \*John thought it would be possible and (for) Jan to swim...

That the SSC, forbidding deletion from a sentential subject, cannot be violated by AD is shown by the ungrammaticality of (19a,b). Typically, if the sentential subject (for John, to amuse John.) is extraposed, as in (19d,e), there is no violation.<sup>6</sup>

- 19a. \*John brought a toy with which amusing himself would be legal/easy/possible.
- 19b. \*John brought a toy (which) amusing himself with would be legal/easy/possible.
- 19c. \*John brought a toy amusing himself with which would be easy.
- 19d. John brought a toy with which it would be easy to amuse himself.
- 19e. John brought a toy (which) it would be easy to amuse himself with.

Regardless of whether Ross' distinction between bi-directional and unidirectional deletion rules is correct, or whether (12b) and (16) to the contrary, AD is a unidirectional rule, it is significant that AD characteristically deletes into one kind of island, but cannot in general delete into islands. For this reason, the nature of the deletion and the nature of the island deserve special attention.

It is interesting to note that Grosu (1972) takes issue with Ross' distinction which he calls the Dichotomous Behavior Principle, and proposes instead to limit the island constraints to rules where an independent condition requires that "an element coreferential to the deleter occur within some configuration which contains the deletee" (23). Since AD manifestly does not require such a condition (cf. (1a)), Grosu's principle predicts that it will not obey island constraints. However this prediction is incorrect, as AD does obey the whole conjunct clause of the CSC, and under certain structural conditions, the piece-of-a-conjunct clause. Grosu's analysis of coordinate structures as head-and-dependent constructions, and his consequent reduction of the CSC to a subclause of the CNPC, reformulated as the claim that satellites can be chopped but not maimed (Subservient Satellite Constraint) predicts incorrectly that violations of the whole-conjunct clause will be permitted while violations of the part-of-a-conjunct clause will always yield ungrammatical sentences. Of course Neeld's (1971) examples showing that several rules obey the whole-conjunct clause but not the part-of-a-conjunct clause are not counterexamples to Grosu's claim since Grosu's exclusion of deletion rules which don't require obligatory coreferentiality makes no prediction about these rules (VP-deletion, Super-Equi, etc), and their properties with respect to island constraints are not explained.

Section 2. I have mentioned similarities between AD and E/SE, but I do not think it is possible that a case can be made for considering all three to be a single rule. Although Neubauer (1970) has shown that SE may operate into complex NP islands of both types, this property nonetheless serves to distinguish SE from AD, for as Neubauer pointed out, speakers whose speech is constrained by Grinder's Intervention Constraint (IC, q.v. below) find ungrammatical such sentences as (20a), where the head of the relative clause could have served as a possible controller for the deletion. In contrast, sentences like (20b) and (20c) are perfectly acceptable to these speakers.

- 20a. \*John met a girl who said that it might be hard to blink his eyes.
- 20b. John brought a girl to bat his eyelashes at. (AD)
- 20c. I need a man in whom to confide my troubles. (AD)

Second, SE can invade a variety of island types without producing ungrammaticality as shown by (21).

- 21a. John left because it became impossible to hold his breath any longer. (Adverbial clause island)
- 21b. Joan knew that holding her breath for six hours would amaze the audience. (Sentential subject island)
- 21c. Joan heard a claim that it was illegal to criticize herself. (Complex NP island)

However, it cannot violate more than one of Ross' island constraints at a time, as shown by (22). Notice that (22d,e) show that SE can with impunity violate the same constraint twice.

- 22a. \*Joan heard a claim that criticizing herself would be unwise. (CNPC + SSC)
- 22b. \*Joan heard a claim that criticizing herself would impress Sam. (CNPC + SSC)
- 22c. \*Joan thought that the book's mentioning the fact that it was difficult to amuse herself was unfortunate. (SSC + CNPC)
- 22d. Sandy and Max got a letter that had a clause that said that trying to improve themselves would be a waste of time. (CNPC + CNPC, not in AD environment)
- 22e. Sandy and Max believed the claim that they would get a letter that said that trying to improve themselves would be a waste of time. (CNPC + CNPC, not in AD environment)

Claiming that the same restriction holds for AD would predict its inability to violate the SSC and the CSC, as demonstrated in (17) and (19), since of necessity it is already violating the CNPC, and this could be taken as evidence that AD and SE are the same rule were it not for the fact that AD cannot violate the CNPC twice, as shown by (23).

- 23a. \*John met a girl who had a toy to amuse himself with.
- 23b. \*John found a store that had a toy to amuse himself with.
- 23c. \*John believed the claim that Carson's had a toy to amuse himself with.

The sentences of (23) show that AD cannot delete into a relative or claim that clause containing the relative-like clause it normally deletes into. SE, however, can violate two complex NPs as easily as one, as illustrated by (22d,e), where the intervening NPs are by virtue of their grammatical or semantic nature, not possible controllers.<sup>7</sup> This means that SE and AD are not constrained identically; maintaining an account like that proposed above for the ungrammaticality of (22a-c), one would be forced to say of SE that it can violate no more than one island constraint

at a time, but of AD that it can make no more than one violation of an island constraint at a time.

In addition, if the controller precedes, but does not command the deletee, sentences with AD are much worse than comparable sentences with SE, as the comparison of (24a) and (24b) shows, although, as (24c) shows, the input to AD is not ill-formed.

- 24a. \*John's being dirty meant that washing himself was a must. (SE)
- 24b. \*John's being bored meant that a toy to amuse himself with would have to be bought.
- 24c. John's being bored meant that a toy for him to amuse himself with would have to be bought.

Another way in which AD differs from SE concerns Grinder's Intervention Constraint (IC) (Grinder 1970). Roughly, the IC is a filter which says that a deletion is blocked if there is a possible controller which bears more primacy relations to the deletee than the actual controller, or if a possible controller bearing equivalent primacy relations intervenes between the actual controller and the deletee and is not a clausemate of the actual controller. Equivalent structures which should block deletion according to Grinder's IC do block it for SE, but do not block it for AD. In the following sentences the NP John intervenes between the controller I (the deleted or suppressed subject of the performative in the (a) and (c) sentences) and the deletee. Both John and I both precede and command the deletee; John and I are not clausemates. The deletion should be blocked, and it is blocked for the SE cases in (25) but it is not blocked for the AD cases in (26).<sup>8</sup>

- 25a. \*John thought it was possible that it would be legal to bring my own lunch.
- 25b. \*I assumed John thought it was possible that it would be legal to bring my own lunch.
- 25c. \*John thought about the possibility that it would be necessary to amuse myself.
- 25d. \*I assumed John thought about the possibility that it would be necessary to amuse myself.
- 26a. John knew of a door jamb which it would be impossible to stub my toe on.
- 26b. I thought John knew of a door jamb which it would be impossible to stub my toe on.

- 26c. John knew of a door jamb which it would be impossible to hurt myself on.
- 26d. I thought John knew of a door jamb which it would be impossible to hurt myself on.

AD, then, is a rule which deletes noun phrases under identity, over a variable. It appears to characteristically, as an essential property, delete NPs from within islands, and although it has been claimed that at least one other rule, SE, may do this, the applicability of AD with certain precede and command relations between controller and deletee, and its properties with regard to the Intervention Constraint distinguish it from E/SE. It is probably predicted by Ross' Formulation of Island Constraints, and definitely predicted by Grosu's formulation, that AD and SE will not be subject to these constraints. Yet, they are not totally immune to the constraints; only one clause of the CSC may be violated, and that only in certain kinds of structures. The SSC may not be violated by AD at all, and AD may not make additional violations of the CNPC beyond those it makes whenever it applies. Thus, the structures to which AD applies merit investigation in order to determine the extent to which one can predict AD's ability to delete noun phrases under identity over a variable from inside an island.

Amchitka Deletion constructions do have a number of peculiar properties.

1. The deletee must be sentient, as the sentences (27) show, regardless of whether or not it is deleted.

- 27a. John brought a book to amuse himself with.
- 27b. John brought a book which it will be easy for him<sub>i</sub> to amuse himself<sub>i</sub> with.
- 27c. \*Those old books brought book lice to be eaten by into the house.
- 27d. \*Those old books brought book lice which it will be possible for them to be eaten by.

2. The disrupted island may not contain an overt negative in the highest clause if it contains the deletion site, as the sentences of (28) show. The sentences (29) show that it may contain a negative in lower clauses, both in the clause containing the deletion site and in the clause containing the NP relativized. The sentences of (30) show that the highest clause may contain a covert negative, even if it contains the deletion site.

- 28a. \*John brought some food to not gorge/starve himself with.
- 28b. \*John brought some food with which not to impose on Mary.
- 28c. John brought some food which it wouldn't be hard to eat.
- 29a. John brought some food which it would be hard not to try to eat.
- 29b. John brought some food which it would be necessary to convince Bill not to eat.
- 29c. John brought some food which it would be hard not to stuff himself with.
- 30a. John brought some food to refuse to eat.
- 30b. John brought a friend to dissuade (from voting).
- 30c. John brought a friend for Bill to dissuade.

3. The disrupted island is not an adverb. Adverbs of all sorts may be preposed as illustrated in (31), but as the sentences of (32) show, these clauses may not. Of course, ordinary relative clauses may not be preposed either, as (33) shows.

- 31a. With a knife, Seymour sliced the salami.
- 31b. Because he was late, Seymour took the bus.
- 31c. In order to arrive on time, Seymour walked fast.
- 31d. To Chicago, Seymour hurried with his precious cargo.
- 32a. \*To sit on, John brought a chair.
- 32b. \*To gorge himself on, John brought some candy.
- 32c. \*For Mary to play with, John brought a puzzle.
- 32d. \*Which it would be fun to play with, John bought a toy.
- 32e. \*With which it would be fun to play, John bought a toy.
- 33a. \*Which was from India, John broke a vase.
- 33b. \*Who Bill hit, I met a boy.
- 33c. \*Which Gladys was hidin<sup>r</sup> under, Cyndy slept in a bed.
- 33d. \*Under which Roosevelt was sitting, Gladys sat on a chair.

4. The verb of the disrupted island refers to the future relative to the time of the main verb (commanding verb), and the island expresses an intention or purpose of the subject of the commanding verb in performing the action referred to by the commanding verb. For example, in (30b) the reason John brought a friend was to have someone to dissuade. In (30c)

he brought a friend in order for Bill to have someone to dissuade. However, these 'purpose infinitives' are quite different from those found in sentences like (34).

- 34a. John eats avocados to gain weight.
- 34b. Mary kissed a frog in order to turn it into a prince.
- 34c. Mary bought a sewing machine in order for Bill to be able to make his own clothes.

For one thing, as (34b) shows, real purpose infinitives may follow in order; as (35) shows, relative purpose infinitives cannot.

- 35a. \*John brought a chair in order to sit on.
- 35b. \*John brought a chair in order for Bill to sit on.

Second, relative purpose infinitives have a 'hole' where the co-referent of the head noun was, e.g. the object of on in (35). The purpose infinitive in (34c) is logically complete, as are those in (34a, b) except for the independently deleted subjects.

Third, as shown in (36), relative purpose constructions can have a relative word if it is the object of a preposition which is pied piped, or if its coreferent is not in the highest clause subordinate to the head. Thus (36d, d).

- 36a. John brought a chair to sit on.
- 36b. \*John brought a chair which to sit on.
- 36c. John brought a chair on which to sit.
- 36d. John brought a puzzle which it would be easy to amuse himself with.

Garden-variety purpose infinitives and clauses cannot immediately follow relative pronouns as shown in (37):

- 37a. \*John ate a raw egg which to impress Jane.
- 37b. \*John ate a raw egg which in order to derive nourishment from it.

Fourth, if a purpose clause or infinitive contains a reference to a previously mentioned NP, it may have a pronoun there as in (38a). But the relative-like construction to which AD applies permits no such pronoun, presumably because it would be redundant--the NP slot whose slot it fills having been deleted or moved as in (38b, c).

- 38a. I bought some toys in order to amuse myself with them.
- 38b. \*I bought a toy to amuse myself with it. (®, \* on one reading)

38c. \*I bought some toys which it will be fun to amuse myself with them.

38d. \*I bought some toys which it will be fun for you to amuse yourself with them.

Finally, ordinary purpose infinitives may (as in 39) contain negatives while relative purpose infinitives, as noted above may not.

39a. John keeps kosher to not offend his mother.

39b. John took the bus in order not to be late.

Observing similar properties in the Latin constructions traditionally called relative purpose clauses, Robin Lakoff (1968:195-211) proposed that they originated as complements of an abstract verb of intent which required that there be no negative in its complement, suggesting 'designate'<sup>9</sup> as a prime candidate. If we were to transfer this analysis into English, we would be claiming that the underlying structure of John brought a chair to sit on, and John brought a chair for Bill to sit on were roughly as in (40).

40a. John brought [np a chair<sub>i</sub> [s John/designate [np [s John  
sit on chair<sub>i</sub>]]]] [hope . ]]

40b. John brought [np a chair<sub>i</sub> [s John/designate [np [s Bill  
sit on chair<sub>i</sub>]]]] [hope . ]]

and that a subsequent rule deleted or suppressed the verb 'designate' and its subject. Does such an analysis provide any way out of the dilemma posed by AD, the deletion of such NPs as the subject of sit in (40a) and does it provide any insight into the restrictions on the use of relative pronouns in this construction?

At first, it appears to provide a way out of the AD dilemma insofar as the deletion of such an NP would now be subject to a controller inside the island, the subject of the immediately higher verb 'designate' in fact. Where there is a variable inside the island, as in John brought a toy which it will be legal to amuse himself with, with an underlying structure like (41), the deletion would be characterizable as Super-Equi, Equi over a variable.

41. John<sub>i</sub> brought [np a toy<sub>j</sub> [s John<sub>i</sub> designated [np [s np [s John<sub>i</sub>  
amuse John<sub>i</sub> with toy<sub>j</sub>]] be legal]]]] [hoped . ]]

Unfortunately, there are at least three major obstacles to such an analysis. First of all, in such sentences as (42), where the head of the relative purpose infinitive does not refer to any object, it is nonsense to speak of designating that object or even hoping or expecting anything concerning it.

42a. John couldn't think of anything to amuse himself with.

42b. John didn't bring anything to sit on.

43a. John couldn't think of anything which he <sup>\*designated</sup>  
                                   { expected  
                                   \ hoped }  
                                   to amuse himself with.

43b. John didn't bring anything which he <sup>\*designated</sup>  
                                   { expected  
                                   \ hoped }  
                                   to sit on.

The sentences of (43) with expect and hope, while grammatical on a reading which concerns an ongoing expectation or hope with respect to some unspecified but presumably definite objects, are not equivalent to (42). The closest I can come to a paraphrase of (42) which is syntactically comparable to (43) would be to use a modal like 'can', as in (44).

44a. John couldn't think of anything which he could amuse himself with.

44b. John didn't bring anything which he could sit on.

Unfortunately, in (44b), the could must be interpreted as epistemic (intransitive, like 'possible'), and taking a sentential complement as in (45a); (44b) is not equivalent to (45b).

45a. John didn't bring anything which [[for John to sit on]  
                                   would be possible]]

45b. John didn't bring anything which [John was capable of  
                                   [John sitting on]]]

If the modal has a subject complement, the Equi/Super-equi solution is no longer available, since there is no controller inside the island. If even 'possible' and epistemic 'can' are two-argument predicate, there is a compelling argument which still holds: even if a third occurrence of John acts as a controller for the deletion of the subject of sit, it must be itself deleted by a rule which deletes NPs under identity, over a variable, and into an island, as (48-51) demonstrate.

Second, there are relative purpose infinitives such as (46) into which no designation or expectation clause with a subject identical to the deleted NP could sensibly be intraposed. The sentences of (46) are not equivalent to those of (47).

46a. John brought us a book to amuse ourselves with.

46b. John brought us a book to read.

47a. John brought us a book which we expected/hoped/designated to amuse ourselves with.

47b. John brought us a book which we intended to read.

Again, a modal such as could could be used in place of hoped or intended, but as before, it might not necessarily require an appropriate subject inside the relative clause island.

Third, even if some such abstract verb-E/SE analysis could be worked out, it would only be giving the deletion problem another name. The reason for this is that the deletion of the 'x intend' or 'be possible for x' clause is not a free deletion (cf. Grinder 1971), but is subject to an identity condition: in order for the subject of 'intend' or whatever to be deleted, it must be identical to some NP outside the relative clause it is part of. Thus while (48a) or (48b) could be the source of (48c), (49a) or (49b) couldn't be the source of (49c), whose meaning is closer to (49d).

48a. John<sub>i</sub> brought a book which NP<sub>i</sub> intended for NP<sub>i</sub> to read.

48b. John<sub>i</sub> brought a book which for NP<sub>i</sub> to read would be possible (for NP<sub>i</sub>).

48c. John brought a book to read.

49a. I brought a book which John<sub>j</sub> intended for NP<sub>j</sub> to read.

49b. I brought a book which for John<sub>j</sub> to read would be possible (for NP<sub>j</sub>)

49c. I brought a book for John to read.

49d. I brought a book which I intended for John to read.

Notice that given this analysis of AD constructions, Grosu's formulation of the relevant island constraint (his subservient satellite constraint (p. 190)) will still not apply; as (49c) shows, the NP in the position of the deletee does not have to be coreferential to the controller. That the deletion of the subject

of an intention predicate or animate adjunct to a possibility predicate is a deletion under identity rather than a free deletion is shown by the examples in (50). If it were a free deletion, we would expect there to be no kind of intervention constraint, and that (50 b,d) would be grammatical, but they are not:

- 50a. John bought a mirror which I intended for me to admire myself in.
- 50b. \*John bought a mirror to admire myself in.
- 50c. Susan bought a bagel which it would be possible for you to cut your teeth on.
- 50d. \*Susan bought a bagel to cut your teeth on. (non-generic)

The 'x intend'-deletion rule is thus deletion under identity, into an island, and as examples like (51) show, it is deletion over a variable--the very problem we set out to solve.

- 51. Sue knew that it was clear that it would be legal to have a book which [ ] it was obvious it would be gauche [ ] to amuse herself with.

Section 3. Perhaps the most striking property of this construction is its similarity to a relative clause construction, as evident in (3,7, etc.). Indeed, as Ross noted (1967:Sec 6.1.1.3), despite its peculiarities, this construction shares several properties with ordinary relative clauses. As demonstrated above, the NP coreferential to the head NP can be pulled or deleted from indefinitely far away. Although the relative pronouns must be deleted in this construction if they refer to the direct object of the highest verb in the 'relative clause' (as in (52)), or if they refer to the object of a preposition which is not pied piped<sup>10</sup> (as in (53)), if the head noun refers to an adjunct to some verb other than that of the highest S in the "relative" clause, the AD clause, like a relative clause, may begin with which, who(m), that or nothing, as (54) and (55) show, and if pied piping occurs in any clause, who(m) and which, but not that occur, again parallel to true relative clauses, as (56) and (57) show.

- 52a. John brought an apple to eat.  
52b. \*John brought an apple which to eat.  
52c. John brought an apple for Bill to eat.  
52d. \*Jcl.n brought an apple which for Bill to eat.
- 53a. John brought a toy to amuse himself with.  
53b. \*John brought a toy which to amuse himself with.  
53c. John brought a toy for me to amuse myself with.  
53d. \*John brought a toy which for me to amuse myself with.
- 54a. John brought a book which it would be fun to read  
54b. John brought a book which it would be fun to look at.  
54c. John brought a man who(m) it would be good for us to know.  
54d. John brought a toy that it would be easy to amuse himself with.  
54e. John brought a toy it would be easy to amuse himself with.
- 55a. John brought a book which he had read.  
55b. John brought a book which he had never looked at.  
55c. John brought a man whom he had met.  
55d. John brought a toy that he didn't want.  
55e. John brought a toy he didn't want.
- 56a. John brought a toy with which it would be easy to amuse himself.  
56b. John brought a woman with whom it would be good (for us) to study.  
56c. \*John brought a toy with that it would be easy to amuse himself.  
56d. \*John brought a toy with it would be easy to amuse himself.
- 57a. John brought a toy with which I had amused myself.  
57b. John brought a woman with whom he wanted (us) to study.  
57c. \*John brought a toy with that he had amused himself.  
57d. \*John brought a toy with he had amused himself.

For some reason which I don't understand, relative pronouns pied piped from the end of the highest clause of the relative clause without leaving some surface clause adjunct behind are much worse than similar pied piping in a true relative clause. Thus, (58a,b) are worse than (59a,b), and also worse than (60a), a true relative clause, and (60b), where, parallel to (56b), the pied piping has been from a lower clause.

58a. I need a man in whom to confide.

58b. I want a book with which to amuse myself.

59a. I need a man in whom to confide my troubles.

59b. I want a book with which to amuse myself after you leave.

60a. I need a man in whom I can confide.

60b. I need a man in whom it will be easy to confide.

Furthermore, as (61) shows, Pied piping is (totally mysteriously) blocked from applying in the highest S of the 'relative clause' if the subject is not deleted.

61a. John brought a toy to amuse himself with.

61b. John brought a toy with which to amuse himself.

61c. John brought a toy for me to amuse myself with.

61d. \*John brought a toy with which for me to amuse myself.

61e. \*John brought a toy with which for Bill to play.

61f. John brought a toy with which it would be fun for me to amuse myself.

As with true relative clauses, 'head nouns' in this construction as well as prepositions pied pipe. Thus (62) is parallel to (63).

62a. I bought a book the cover of which it should be easy to express myself on.

62b. I bought a book the cover of which it should be easy for Bill to restore.

62c. I bought a book the cover of which (\*for one) to decorate with crayons.

63a. I bought a book the cover of which Bill said John restored.

63b. I bought a book the cover of which I liked.

As with pied piping of prepositions, there is, however, a mysterious restriction that if pied piping occurs in the highest clause of the "relative" clauses it may not leave a 'hole' at the end of the (surface counterpart of the) clause from which the NP was moved. Thus, sentences (62a,b) where the pied piping is from a lower clause, and sentences (62c) and (64) where it is from the highest clause, but doesn't leave a hole, are better by far than the sentences of (65), where the pied piping is from the highest clause in the 'relative clause' and leaves a hole at the end of the clause.

64. I bought a book the cover of which (\*for one) to restore tonight.

65a. ??I bought a book the cover of which to restore.

65b. ??I bought a book the cover of which to express myself on.

A third feature of these putative relative clauses which involves a difference in their syntax when the WH-coreferential NP (the relative pronoun) is in the highest clause under the head is the definiteness of the head NP. In ordinary relative clauses as in (66), it is immaterial whether the head is definite or indefinite, and depth of embedding of the WH-coreferential NP is irrelevant.

66a. John met a boy who Mary likes.

66b. John met the boy who Mary likes.

66c. John met a boy who it's possible Mary will like.

66d. John met the boy who Bill says Mary likes.

In these putative relative clauses, however, the head must be indefinite if the WH-coreferential NP is in the highest clause of the 'relative clause,' as demonstrated by the difference between the sentences of (67) and those of (68).

67a. I bought a toy to amuse myself with.

67b. I bought a chair (for Bill) to restore.

68a. \*I bought the toy to amuse myself with.

68b. \*I bought the chair (for Bill) to restore.

As the sentences of (69) show, definiteness is irrelevant if the WH-coreferential NP is more deeply embedded.

69a. I bought a chair which it will be necessary (for Bill) to restore.

69b. I bought the chair which it will be necessary (for Bill) to restore.

Probably the most striking difference between true relative clauses and these relative-clause-like constructions is that while in true relative clauses, the relative pronoun can originate as a subject at any depth of embedding as in (70), the relative pronoun in these similar structures cannot have been moved from subject position, as (71) shows.

70a. I know a boy who likes Dali.

70b. I know a boy who Bill says likes Dali.

70c. I know a boy who it is obvious Bill thinks likes' Dali.

71a. \*Mary hired [a boy to draw a picture of himself].

71b. \*Mary hired a boy who it would be easy (for him) to draw a picture of himself.

71c. ?\*Mary hired a man for whom it would be easy to teach me Sanskrit.

71d. \*Mary hired a man for whom it's possible to teach me Sanskrit.

It is true that there are sentences like (72), where

72. I hired a man to teach me Sanskrit.

a man refers to the object of hired as well as the underlying subject of teach. However, there is no reason to suppose that (72) is not a sentence with an ordinary relative clause which has undergone WH-be deletion. That is, there is no reason not to claim that (72) is derived from a structure similar to (73), which has suffered the same deletion of a relative pronoun and a form of be that applies to derive such constructions as (74).

73. I hired a man who<sub>{is}</sub> to teach me Sanskrit.  
 {was}

74a. The man presumed to be killed in the plane crash was from Louisiana.

74b. The man peeking in the window needs glasses.

74c. John wants someone tall for the part.

Notice that (72) and (73) involve the "modal" be to. Like other modals, it has no infinitive form, and could not occur in a structure like (71c,d).

75a. \*Mary expects Bill to be to teach Sanskrit.

75b. \*Mary hired a man who it's possible (for) to be to teach me Sanskrit.

75c. \*Mary hired a man for whom it's possible to be to teach me Sanskrit.

These putative relative clauses are, however, subject to the CSC, and CNPC, and the SSC, exactly as are true relative clauses, as the ungrammatical sentences in (76) show.

76a. \*John mentioned some toys which it will easy (for him) to amuse himself with and games.

76b. \*John mentioned some toys which it will be easy (for him) to amuse himself with and for everyone to have a good time.

76c. \*I brought some toys which the girl who said it would be easy to amuse myself with liked.

76d. \*I brought some toys which John rejected the notion it would be easy (for me) to amuse myself with.

76e. \*I brought some toys which it's possible (that) (for me) to amuse myself with would be easy.

76f. I brought some toys which it's possible it would be easy (for me) to amuse myself with.

Further similarities between these putative relative clauses and true relative clauses involve the covert definiteness of the coreferential NP (the relative pronoun) as discussed by Morgan (1972). He points out that even when the head NP is definite, the coreferential NP is indefinite, as evidenced by various co-occurrence restrictions concerning definite and indefinite NPs.

Tough-movement moves only definite NP, as the ungrammaticality of (77c) testifies. Yet both true relative clauses and these putative relative clauses on indefinite heads permit tough-movement:

77a. I bought a book which will be hard to put down.

77b. I bought a book which will be hard to tear myself away from.

77c. \*A book which I bought was hard to put down.

Morgan's evidence from there-insertion, intensive reflexives, and the non-occurrence of stative predicates with indefinite subjects is not relevant

because it refers to subjects<sup>11</sup>, and the construction in question does not permit subjects to be 'relativized'.

In summary, the clause from which AD deletes the subject when identical to a commanding NP has all of the surface characteristics of a relative clause: it begins with who(m), which, that or no pronoun, there is nothing in the slot for the constituent which the relative pronoun refers to, and there is evidence of pied piping of both pronouns and noun phrases. It is subject to Ross constraints in exactly the ways true relative clauses are, and despite its differentiating characteristic that the head noun must be indefinite, as with true relative clauses the embedded coreferential NP (the one which shows up as a relative pronoun) must be definite. Nonetheless, the formation of these relative-like clauses is subject to restrictions on pied piping and definiteness when the coreferential NP originates in the highest clause in the 'relative' clause which do not hold for true relative clauses. Also, unlike true relative clauses, in these relative-like clauses the relative pronoun must not have been moved from subject position. Is it simply a strange coincidence that AD deletes only subjects? AD is optional for deeply embedded clauses, but this is exactly where the violation is clearest. (cf. (71b-d), and whether or not AD applies is irrelevant to it, so the answer can't be that AD removes the environment from this relative clause formation.

Of course, it is not surprising that these relative-like clauses don't behave exactly like true relative clauses--logically they are more than just relative clauses. They contain some reference to an intention of the commanding subject NP with respect to the relativized NP. Ideally we would be able to determine how aspects of this difference, reflected in the underlying structure of this construction, would predict the anomalous WH-movement behavior as well as the anomalous deletion behavior. Unfortunately no such analysis falls easily out of these properties. :

Section 4:Conclusion. What we are left with is an identity deletion rule which operates forwards and backwards over a variable and into complex NP islands of a certain type. This is in accordance with Ross' (1967) claim that rules which delete bi-directionally will fail to obey island constraints as well as with Grosu's claim. However this rule is constrained strictly by the SSC and one clause of the CSC, and to my knowledge, neither Ross' recent (1971b) work on variables, nor Grosu's work on the strategic nature of island constraints, predicts such a distribution. This rule shares all of these properties with SuperEqui, and would easily be considered a subcase of SE, but for the various conditions on it, and the fact that in a few respects it is not constrained by conditions constraining SE (e.g. the IC) and vice versa.

Second, the evidence sketched in Section 3 indicates that the interaction of AD with relative clause formation requires eight or so special conditions, of which four or more are global, and three refer to the type of structure to which AD applies; of these three, two hold regardless of whether AD actually applies, or even can apply. Third, taking AD and the relative clause rules together, out of a total of 11 or so conditions constraining application, four refer to a distinction between highest clause in the island and lower clauses, and all of these can be thought of<sup>12</sup> as describing conditions or operations that are obligatory for highest clauses and optional for lower clauses; so not only does SE have this property, AD has it, and all three aspects of relative clause formation (movement, deletion, and occurrence of that have it.

This collection of conditions, some of them with conditions on them, reads like a linguist's nightmare. They deserve an explanation, and unfortunately I have none to offer. What I would like to do however, is make explicit some of the consequences of simply claiming that AD is merely SE applying into a relative clause.

First of all, this claim offers no insight into the fact that when AD applies into the highest clause of a relative clause as in (1b-d), the result is a sentence which, like those resulting from Equi, is relatively simple perceptually, yet application of SE into object complements (as in (8b)) generally yields a relatively sophisticated and complex sentence.

8b.' I know Mary will think it is unnecessary to kill herself.

Second, it fails to explain why the IC should fail to hold for AD structures, even though it generally holds for SE into relative clause islands, for those speakers for whom it is strong (cf. (20)).

Third, it fails to explain why SE but not AD can violate the CNPC twice in a construction (cf. (22,23)).

Fourth, the claim that AD is simply a case of SE fails to predict that SE, which is usually optional, is obligatory into the highest clause of a relative clause. If some principle could be adduced which would make AD into a highest clause (call it  $AD_1$ ) a subcase of Equi, which is usually obligatory, rather than of SE, then it is quite mysterious why Equi should be governed (by verbs dealing with mental attitudes toward actions e.g., want, try, intend..., but not assert or realize) and SE ungoverned,<sup>13</sup> while  $AD_1$  and  $AD_n$  are "governed" by the same wide class of seemingly diverse predicates (e.g., accept, bring, buy, catch, deserve, find, get, have, ignore, know about, make, need, own, refuse, talk about, want, win..., but not break, drop, throw away...). For that matter, it is exceedingly curious that backwards Equi doesn't seem to be governed<sup>14</sup> and is optional whereas forwards Equi is obligatory. The only other alternative that occurs to me that could make a reasonable generalization about the relationship between obligatory application and highest clauses would be to say that this is a property that inheres in environments (like islandhood), rather than in rules as Ross appears to be claiming in recent work on the notion of primacy.

Fifth, claiming that SE and AD are the same rule requires mentioning in the SD of SE the structural requirements for forward and backward AD since the notion of highest clause in the relative clause is important for AD, but

such a structural description totally obscures the great generality that otherwise pertains for SE, as demonstrated in Section 3. (See the Appendix for an attempt at stating some of the details of the structural description and conditions for application of AD. Obviously, somehow attributing the obligatory/optional distinction to environments rather than rules would mitigate this difficulty.

Finally, collapsing AD with SE makes it impossible to refer to (much less explain) the global conditions which AD imposes on relative clause formation and the indefiniteness condition in any principled way, since, as a comparison of (52-69) with (78) shows, SE generally does not impose such conditions.

78a. John thought that it would be easy (for him) to defend himself with a/the boomerang which/that/∅ he made.

78b. A/the boomerang which/that/∅ John thought it would be easy (for him) to defend himself with...

78c. John tried to defend himself with a/the boomerang which/that/∅ he made.

78d. A/the boomerang which/that/∅ John tried to defend himself with... Someday one may indeed be able to show that SE and AD are the same rule, but before that day comes, it seems to me that there will have to be a(nother) major revision in our view of rule environments. The fact of differential application in immediately commanded clauses and from more remotely commanded clauses will have to be stated not as part of the structural description of particular rules, or even as comments on them, but, like Ross' constraints on variables, as conditions on environments in certain types of rules.

#### NOTES

<sup>1</sup>Whether or not others may be included, and who they may be is an interesting problem in its own right, but far beyond the scope of the present study. The question is taken up in Creen (forthcoming).

<sup>2</sup>Kimball (1971) has made an appealing case for considering Super-Equi (SE) to be really two sequential processes, Equi and the deletion of the controlling dative NP. Grinder (1971) points out some obstacles for this view, however, and it is worth noticing that in any case, the dative deletion is deletion over a variable, as shown by (a) and deletion under identity, as shown by (b). Although, as Kimball argues (see also Postal(to appear)), possible may take a dative argument in addition to its sentential argument (but only when it has a (subjectless) infinitive complement--cf. (a) and (c)), it cannot do so in sentences like (a). The controller for the deletion of necessary's dative must be the subject of thought.

- a. John<sub>i</sub> thought about the possibility (\*for him<sub>i</sub>) of it being necessary [for Doom<sub>i</sub>] to kill himself<sub>i</sub>.
- b. \*John<sub>i</sub> thought about the possibility of it being necessary [for Doom<sub>j</sub>] to kill herself<sub>j</sub>.
- c. \*It is possible for you that it may rain.

<sup>3</sup>Grinder did not, however, discuss the fact that Equi is obligatory and governed (although with want and expect and certain assumptions about control and coreference, sentences like (a) and (b) are possible), while SE is optional and ungoverned, which may pose an obstacle to his claim that Equi is a structurally defined subcase of SE, in addition to those discussed by Kimball and Neubauer (1972).

- a. I expect myself to fall.
- b. I want me to win.

See Morgan (1970) for commentary on these exceptional cases.

<sup>4</sup>Ross notes that it is a "total mystery" to him why unidirectional controlled deletions should obey the constraint but not bi-directional deletions.

If this distinction is a valid distinguishing principle, it means one is forced to reject certain of Neubauer's (1970) arguments that chopping cannot be considered to be copying and deletion. Neubauer makes this claim largely

on the grounds that three deletion rules (Super Equi, Sluicing (cf. Ross 1969) and a VP-deleting rule he calls Ludwig) do not obey the CNPC and the CSC. However, since as the following sentences show, these rules delete backwards into clauses subordinate to the clauses containing their antecedents, as well as forwards, they should not be expected to obey the constraints.

- ia. It frustrated Sam that exhibiting himself in public was illegal.
- ib. That exhibiting himself in public was illegal frustrated Sam.
- ic. \*That exhibiting himself in public was illegal means that Sam is a criminal.
- iia. John is dancing somewhere, although I don't know where.
- iib. Although I don't know where, John is dancing somewhere.
- iic. \*I don't know where, although John is dancing somewhere.
- iiia. I'm sure someone can swim the English Channel, although I can't.
- iiib. Although I can't, I'm sure someone can swim the English Channel.
- iiic. \*I can't, although I'm sure someone can swim the English Channel.

Interestingly, Ross noticed the deletion involved in sentences like (1) (cf. his 6.16-6.21). However, he was interested mainly in the relative clause-like properties (to be described below) of such constructions, and did not explore in detail the conditions under which the subjects of these subordinate clauses could be deleted.

<sup>5</sup> It is interesting to observe that sentences like (a,b) with verbs which may (cf. Akatsuka 1972) take sentential subjects, are much better than (12a,d), apparently because it is possible (and probably necessary) to reconstruct a source with a preceding and commanding controller (as in (c,d)) which is deleted in the course of the derivation by backwards Equi, as in (e,f).

- a. A puzzle to amuse himself with always pleases John.
- b. A puzzle to play with excited John.
- c. John's getting a puzzle to amuse himself with always pleases John.
- d. John's seeing a puzzle to play with excited John.
- e. Getting a puzzle to amuse himself with always pleases John.
- f. Seeing a puzzle to play with excited John.

I am not at present prepared to say whether the relevance of this possibility of reconstructing an otherwise possible source reflects 1) the set of possible underlying structures for the sentence in question, 2) a need for a transderivational constraint, 3) the need for interpretive rules, or 4) something else.

<sup>6</sup> The LBC, which forbids the chopping of a leftmost NP branch of a larger NP, may not be violated either, as the following sentences show.

- ia. John brought a chair for his wife to sit on.
- ib. \*John brought a chair (for) 's wife to sit on.
- ic. \*John brought a chair wife to sit on.
- id. \*John brought a chair for wife to sit on.

Regardless of whether Ross' formulation of the constraint as a constraint on chopping left branches is correct, I suspect that whatever it is that accounts for the ungrammaticality of (iib) and iic) below also accounts for the ungrammaticality of (ib-d).

- iia. Sue bought John's book.
- iib. \*Who did Sue buy 's book?
- iic. \*Whose did Sue buy book?
- iid. Whose book did Sue buy?

<sup>7</sup> This is evidence that the notion 'possible controller' is more than transderivational: if the NP intervening in controller position is not

'! referential, Grinder's Intervention Constraint fails to hold.

- a. Sandy and Max got a letter that said that trying to improve themselves would be a waste of time.
- b. \*Those books say that it will be necessary [for them] to be read aloud.
- c. \*John met a girl who said that it might be difficult to blink his eyes.

Sentence (a), where the intervening NP is inanimate, and as shown by (b) incapable of being a controller for SE, contrasts with the ungrammatical (c) where the intervening NP, a girl, could control a deletion. Similarly for

the non-referential NP one in (d) (cf. c) and the abstract (sentential) and non-referential NP extent in (e).

d. We said one couldn't prove that it would be difficult to defend ourselves.

e. Joan bought a book that one could read to learn if the extent of the invasion entailed that it would be futile to try to defend himself.

If an NP is non-referential, it does not make sense to speak of some other NP as being co-referential to it.

<sup>8</sup>The IC is not as strong for me as for Grinder, so that judgements in (25) and (26) are those of informants for whom Grinder's version of the IC holds. For me, the sentences of (25) and (26) are equally good.

<sup>9</sup>Lakoff chose an abstract verb with the meaning of 'designate' on the basis of her observations that such verbs (appoint, choose, designate) have an appropriate meaning, and like relative purpose clauses and AD-constructions, do not permit clauses with negated main verbs to be embedded beneath them:

\*They appointed Arthur not to shoot the Easter Bunny. (208)

However, the meaning of such verbs involves reference to an explicit act of selection which is not required in the construction at issue. Verbs with the meaning of intend, expect, or hope, which all, like the 'designate'-verbs, require a sentient subject seem more appropriate semantically to the relative purpose infinitive in English, despite the fact that they do permit negative clauses as complements, and relative purpose infinitives may not be negative.

<sup>10</sup>I am deliberately inexplicit as to whether this is a global condition referring to subsequent deletion or one referring to previous deletion.

<sup>11</sup>For no obvious reason, relative pronouns can have intensive reflexives only if they refer to subjects. Thus:

a. Mary met a/the man who himself supports the liberation of women.

b. Joan was captivated by a/the friend who(m)/which himself Mary brought.

<sup>12</sup> Whether the rule concerning the appearance of that is obligatory in highest or lowest clauses depends on whether it is formulated as an insertion or a deletion rule. If it is a deletion rule, it is obligatory in highest clauses if they are infinitive clauses.

<sup>13</sup> Actually both AD and SE are blocked by predicates like predestined, preferred etc. in the 'variable':

- a. John bought a chair which (it was obvious that) it would be  
'preferred' } { for him } to paint by himself.  
{ preordained } { \*Ø }
- b. John thought that (it was obvious that) it was preordained (for him)  
to be chess champion of the world. { \*Ø }

but this is the closest SE comes to being governed, as far as I know.

<sup>14</sup> A similar situation obtains with subject raising, with distinct classes of verbs triggering raising into subject position and raising into object position. This raises the question of whether this is really a single rule rather than two (or more) rules.

## Appendix: Stating AD

A statement of AD in the usual notational system would look roughly like the following:

## I. Forwards

X	NP <sub>i</sub>	Y	[	np	NP <sub>j</sub>	[	s	Z	[	s	NP <sub>i</sub>	W]	]Q	]R
1	2	3		4			5			6	7	8	9	
->	1	2	3	4			5			Ø	7	8	9	

OBLIGATORY if Z is null

OPTIONAL otherwise

Condition: a) 2 must command 6

## II. Backwards

X	[	np	NP <sub>j</sub>	[	s	Z	[	s	NP <sub>i</sub>	W]	]Y	]Q	NP <sub>i</sub>	R
1		2		3	4	5	6	7	8	9				
->	1	2		3	Ø	5	6	7	8	9				

Conditions: ill-understood, but 8 need not command 4

Other conditions: b) NP<sub>i</sub> must refer to a sentient being.

c) If Z is null, W must not contain an overt negative.

d) If Z is null, NP<sub>j</sub> must be indefinite

e) Intervention Constraint does not always hold.

The above formulations assume SVO order, but assuming VSO order at the time of application doesn't reduce the need for a double structural description. Notice also that 'conditions' (b),(c) and (d) are well-formedness conditions on the input tree per se; they hold even if the rule does not apply. Indeed, (c) and (d) hold even if it cannot apply, i.e. if the identity condition is not met.

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