

Reconstruction and mapping

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Abstract

First, Diesing's (1992) Mapping Hypothesis is argued to hold for *wh*-phrases as well as NPs, thus accounting for reconstruction effects for VP-internal non-referential (non-quantificational) *wh*-phrases and the lack of such effects for VP-external referential (quantificational) *wh*-phrases. Second, Spec,AGR is argued to be the position in which such quantificational elements reside, accounting for cross-linguistic correlations between interpretation and AGR (as Case, agreement and syntactic position). Third, AGR is independently shown to be relevant to *wh*-interpretation, thus supporting the tack of implicating AGR in that domain.

1. Reconstruction

This paper begins by arguing that *wh*-phrases, like NPs, obey Diesing's (1992) Mapping Hypothesis. Referential *wh*-phrases, like quantificational NPs, are VP-external at LF and no reconstruction effects are observed; non-referential *wh*-phrases, like non-quantificational NPs, are VP-internal at LF, causing reconstruction effects.

1.1. A reconstruction asymmetry

Heycock (1992) points out the following contrasts:

- (1) a. [Which stories about Diana]_i did she_i most object to t_j?
b. *[How many stories about Diana]_i is she_i likely to invent t_j?
- (2) a. [Which gaffes that could have damaged Ferraro's career]_i has she_i already recovered from t_j?
b. *[How many gaffes that could damage Ferraro's career]_i do you think she_i's likely to make t_j?

- (3) a. [Which lies aimed at exonerating Clifford_i]_j do you think he_i expected t_j to be effective?
 b. *[How many lies aimed at exonerating Clifford_i]_j do you think he_i may come up with t_j?

In each of the (a) examples, coreference between the R-expression in the moved wh-phrase and a pronoun is possible. In the (b) examples, it is not. I will assume, following Heycock, that the ungrammaticality of the (b) examples results from obligatory reconstruction of the moved phrase to the position of its trace;¹ this causes a Binding Theory (Condition C) violation, as in the following examples:

- (4) Binding Theory Condition C: an R-expression must not be bound.
 (5) a. *She_i is likely to invent 5 stories about Diana_a.
 b. *You think she_i's likely to make 5 gaffes that could damage Ferraro_a's career.
 c. *You think he_i may come up with 5 lies aimed at exonerating Clifford_a.

The descriptive generalization is that *which* phrases need not reconstruct (avoiding Condition C violations) but *how many* phrases obligatorily do so (violating Condition C).

A similar contrast was originally noted by Cinque (1984):

- (6) a. [Which allegations about John_i]_j do you think he_i will deny t_j?
 b. *[How proud of John_i]_j do you think he_i is t_j?

This contrast suggested the following generalization: arguments need not reconstruct (Condition C violations avoided) but predicates obligatorily do so (violating Condition C). Barss (1986) proposes a path-theoretic approach to Cinque's contrasts which makes crucial use of the predicate/argument asymmetry. Huang (1993) extends the VP-internal subject hypothesis to such predicates arguing that a subject trace forces the Condition C effects. Both proposals depend on the relevant contrast being due to the presence of a 'subject' position within the moved predicate in some way triggering the BT violation.

However, attempting to extend Barss' or Huang's accounts to Heycock's asymmetries fails. The phrases triggering obligatory reconstruction do not have subjects:

- (7) *How many meters from John_i did Mary say he_i threw the ball?

¹ I remain agnostic as to the exact mechanism for reconstruction, be it literal reconstruction (=downward movement) or copying of the moved phrase (as in Chomsky 1992).

Heycock claims that the relevant generalization covering both types of examples has to do with some notion of ‘referentiality’. She offers the following examples in favor of this:

- (8) a. [How many of the stories about Diana_i]_j was she_i really upset by t_j?
 b. [How many of the gaffes that could have damaged Ferraro_i’s career]_j has she_i already recovered from t_j?
 c. [How many of the lies aimed at exonerating Clifford_i]_j did he_i claim that he_i had no knowledge of t_j?

These examples, with partitive *how many* phrases, do not require reconstruction. The relevant difference between these and the (b) examples in (1) is that the head noun, being definite, is presupposed to exist. That is, (8)a asks a question about a set of stories that is presupposed to exist. This differs from the set of stories in (1)b. On the other hand a *which* phrase (like that in (1)a) is ‘D-linked’, meaning it is asking a question about something in the discourse. In this way it is also presupposed. Thus, the generalization is the following:

- (9) • **Referential** phrases need not reconstruct. Referential = D-linked (cf. *which* phrase) or presupposed to exist (cf. partitive *how many* phrase).
 • **Non-referential** phrases must reconstruct. Non-referential = predicates (cf. *how proud* phrase) or non-partitive non-presupposed *how many* phrase.

The following section attempts to derive the reconstruction asymmetry from the syntactic/semantic treatment of ‘referentiality’.

1.2. Mapping from syntax

Diesing (1992), developing work by Kamp (1981), Heim (1982), Kratzer (1989) and others, represents quantificational interpretations of NPs in structures consisting of the quantifier, its restrictor, and its nuclear scope (10). Basing her hypothesis, in part, on the interpretation of scrambled vs. non-scrambled NPs in German, she then argues that these ‘tripartite’ structures are mapped off of the syntactic LF representation following the algorithm in (11):

(10) [quantifier] [restrictive clause] [nuclear scope]

- (11) **Mapping Hypothesis** (MH): VP-external NPs map onto the restrictive clause of a tripartite structure; VP-internal NPs map onto the nuclear scope.

For example, a sentence like (12)a will have the LF in (12)b, which will map onto the tripartite structure in (12)c. This will give the correct interpretation, roughly that found in (12)d:

- (12) a. Every cat meows.
 b. $[_{IP} \text{ [every cat]}_i \text{ } [_{VP} t_i \text{ meows}]]$
 c. $[\text{every}(x)]_Q \text{ } [x \text{ a cat}]_{RC} \text{ } [x \text{ meows}]_{NS}$
 d. for all x , if x is a cat, x meows

Milsark (1974) points out that indefinite NPs are potentially ambiguous. Generally, they can receive either a proportional or cardinal reading:

- (13) I saw some ghosts in the attic. (ambiguous)

On the proportional reading, there is a presupposed set of ghosts and I saw some (of them) in the attic. The cardinal reading just claims that I saw a small number of ghosts in the attic. Diesing proposes that the reading the NP receives depends on whether the NP is VP-internal or VP-external at LF, following her MH. If the NP QR's to VP, the proportional/quantificational reading is derived, as in (14). If the NP remains in VP, the cardinal/non-quantificational reading results, as in (15):²

- (14) a. $\dots[\text{some } x]_Q \text{ } [\text{ghosts}(x)]_{RC} \text{ } [\dots\text{saw } x \text{ in the attic}]_{NS}$ (proportional)
 b. $\dots[_{VP} \text{ some ghosts}_i \text{ } [_{VP}\dots\text{saw } t_i \text{ in the attic}]]$ (LF)
 (15) a. $\dots[\text{ saw } [\text{some ghosts}] \text{ in the attic}]_{NS}$ (cardinal)
 b. $\dots[_{VP}\dots\text{saw some ghosts in the attic}]$ (LF)

The following examples, adapted from Heycock (1992) (see also Rullmann 1992), show that an ambiguity similar to the proportional/cardinal one can also be found in extracted *how many* phrases:

- (16) $[\text{How many ghosts}]_i$ do you think that Britt saw t_i in the attic?
 (ambiguous)
- (17) a. What is the number n such that there are n ghosts that you think Britt saw in the attic?
 (referential reading)
 b. What is the number n such that you think Britt saw n ghosts in the attic?
 (non-referential reading)

² Here and for the rest of this paper I use 'quantificational' as a cover term for 'proportional' or 'specific' interpretations; 'non-quantificational' is used for 'cardinal', 'non-specific', or 'existential' readings. This appears to follow Diesing's (1992) usage. I hope no confusion arises from this usage.

On the reading described in (17)a, we have a presupposed set of ghosts and we are asking the cardinality of that set; this reading is what Heycock referred to as ‘referential’ above. On reading (17)b, we have no presupposed set of ghosts and are simply asking for the number of ghosts seen; this is Heycock’s ‘non-referential’ reading. This ambiguity is analogous to that found in the ‘unmoved’ versions of this question:

- (18) I think that Britt saw [five ghosts] in the attic. (ambiguous)
 (19) a. ...[five x]_Q [ghost(x)]_{RC} [...saw x in the attic]_{NS} (proportional)
 b. ...[saw [five ghosts] in the attic]_{NS} (cardinal)

Following Diesing, we would represent the proportional (=presupposed) reading in a tripartite structure like (19)a, and the cardinal (=non-presupposed) reading in a structure like (19)b. My claim, then, is that the referential/non-referential ambiguity in wh-phrases *is* the proportional/cardinal ambiguity in NPs. Thus, I make the following hypothesis (see also Berman 1991):

- (20) **Hypothesis:** Wh-phrases obey Diesing’s Mapping Hypothesis.

This means, then, that a referential wh-phrase will be VP-external at LF and map onto a tripartite structure, as in (21), while a non-referential wh-phrase will have to be VP-internal at LF, as in (22):³

- (21) a. [How many ghosts]_i do you think Britt [_{VP} saw t_j in the attic]?
 b. [how many(x)] [ghost(x)] ... [saw x in the attic]
 (22) a. [How many]_j do you think Britt [_{VP}saw [t_j ghosts] in the attic]?
 b. [how many(x)] ... [saw [x ghosts] in the attic]

This hypothesis makes testable claims about the position of wh-phrases at LF. This is the topic of the next section.

1.3. Combining mapping with binding

Recall Heycock’s generalization: referential wh-phrases need not reconstruct (avoiding BT violations) while non-referential wh-phrases obligatorily reconstruct (incurring BT violations). This generalization now follows from my extension of Diesing’s theory of interpretation. A referential/proportional phrase maps onto a tripartite structure and thus is VP-external at LF; if an R-expression is

³ As is evident in the structures illustrated in the text, I assume that the NP part of the wh-phrase is what must be ‘VP-internal’ or ‘VP-external’ as required by the MH.

embedded within this phrase, no BT violation occurs because it is free (23). A non-referential/cardinal NP must be VP-internal at LF (following the MH); an R-expression embedded within this phrase will potentially violate condition C (24).⁴

- (23) a. [How many ghosts that scared Britt_i]_j do you think she_i saw t_j in the attic? (referential)
 b. [how many(x)] [ghosts(x) that scared Britt_i] ... she_i ... [saw x in the attic] (no reconstruction)
- (24) a. *[How many ghosts that could scare Britt_i]_j is she_i likely to see t_j? (non-referential)
 b. [how many(x)] ... she_i ... [see x ghosts that could scare Britt_i] (reconstruction)

Now Heycock's original asymmetries can also be explained. The contrast in grammaticality in (25) results from the different LFs in (26):

- (25) a. [Which stories about Diana_i]_j did she_i most object to t_j?
 b. *[How many stories about Diana_i]_j is she_i likely to invent t_j?
- (26) a. [which(x)] [x stories about Diana] ... [...object to x]
 b. [how many(x)]... she_i... [...invent x stories about Diana_i]

Which phrases are referential (D-linked, presupposed) and do not reconstruct, avoiding a BT violation, while (non-presupposed) *how many* phrases are non-referential and do reconstruct, forcing a BT violation.

Summary. Referential *wh* phrases are like proportional NPs: semantically, they have a presupposed interpretation and syntactically, they behave as if VP-external. Non-referential *wh* phrases are like cardinal NPs: semantically, they have a non-presupposed interpretation and syntactically they behave as if VP-internal.

2. Mapping and AGR

As discussed in Section 1, the MH states that notions like 'VP-internal' and 'VP-external' are relevant to NP/*wh*-interpretation. In this section I argue that the notion of 'VP-external' should be fine-tuned to refer to actual syntactic positions: Spec,AGR.

⁴ To facilitate the following contrast I have added a modal context to the second example making a presupposition of existence much more difficult, forcing the non-referential reading of the *wh*-phrase.

2.1. Checking theory and mapping

Chomsky (1991, 1992) argues that the position in which accusative Case is ‘checked’ is the specifier of a functional projection dominating VP, AGR_o(bject) Phrase. Thus, nominative and accusative Case-assignment are unified, both resulting from a Spec-Head relation with an AGR head.

Chomsky’s claim is that objects in English move to Spec,AGR_o at LF, paralleling the overt movement we see of subjects to Spec,AGR_s(object). A sentence like (27)a will have the LF in (27)b:

- (27) a. I read many books.
 b. $[_{AGRs} I]_i \dots [_{AGRo} \text{many books}]_i [_{VP} t_j \dots t_i \dots]$ (LF)

Now, if we combine Diesing’s Mapping Hypothesis (that VP-external NPs are quantificational and VP-internal NPs are non-quantificational) with Chomsky’s checking theory, we predict that all object NPs, since they are VP-external (Chomsky), should be quantificational (Diesing) because they will map onto a tripartite structure like the following:

- (28) $I \dots [_{\text{many}(x)}]_Q [x \text{ a book}]_{RC} [\text{read } x]_{NS}$

We already know from the previous section that objects are, in fact, potentially ambiguous. In Runner (1993, 1994) I hypothesized that there are in fact two object positions, as Diesing suggests; I argued that NPs which are in Spec,AGR are those which are mapped onto tripartite structures, following the MH. Further I suggested that an NP can be licensed VP-internally, resulting in a non-quantificational interpretation.⁵ So, in addition to the LF and tripartite structure in (27)b and (28) for a quantificational interpretation, we have the possibility of the following LF and non-tripartite structure for a non-quantificational interpretation:

- (29) a. $[_{AGRs} \dots [_{VP} \dots \text{many books}] \dots]$ (LF)
 b. $I \dots [\text{read } \text{many books}]]_{NS}$

Thus, the generalization I hypothesized is the following:⁶

⁵ I tentatively follow Belletti (1988), assuming ‘partitive’ Case licenses these VP-internal objects.

⁶ David Adger independently argues for a similar account in his dissertation (Adger 1993); see also Meinunger (this volume).

- (30) • Spec,AGR is for proportional/definite/specific NPs
 • VP-internal is for cardinal/non-specific/existential NPs

This hypothesis makes certain predictions: cross-linguistically we should find correlations between AGR and interpretation. These correlations might manifest themselves in at least the following ways, which the subsequent sections will document: AGR as overt Case and interpretation; AGR as overt agreement and interpretation; Spec,AGRP position and interpretation; VP-internal position and interpretation.⁷

2.2. AGR and interpretation

2.2.1. Case and interpretation

The first type of evidence in favor of the present hypothesis would be a correlation between AGR as Case and interpretation. In fact, de Hoop (1992) argues that there is a correlation between Case and interpretation. I illustrate this here with Turkish data (from Enç 1991; see also Finnish, Greenlandic Eskimo (de Hoop 1992), Hindi/Urdu (Butt 1993)). Consider the following sentence, followed by either (32)a or (32)b:

- (31) Odam-a birkaç çocuk girdi.
 my-room-DAT several children entered
 ‘Several children entered my room.’
- (32) a. İki kız-ı tanıyordum.
 two girl-ACC I-knew
 ‘I knew two girls.’
 b. İki kız tanıyordum.
 two girl I-knew
 ‘I knew two girls.’

The object *iki kız-ı* ‘two girls’ in (32)a bears overt accusative Case. It also receives a special interpretation: it is understood as a subset of the children introduced in (31). In contrast, the object in (32)b, which bears no Case, is understood as not being part of the set of children in (31). What we find in Turkish, then, is an overt morphological distinction between the two readings of NPs discussed in Section 1 (proportional vs. cardinal).

⁷ As noted above, I assume definite NPs reside in Spec,AGR, as well as truly quantificational ones. See Runner (1994) for further discussion of how definites fit in and for a somewhat different approach from that implied in the text.

If accusative Case-marked objects move to Spec,AGR, while non-Case-marked objects remain in VP, as in (33)a and b, respectively, the correlation between overt Case and interpretation follows from the MH: VP-external NPs receive a quantificational reading while VP-internal ones are understood non-quantificationally, as in (34)a and b, respectively:⁸

- (33) a. [...[_{AGRO} two girls_i [_{VP} ...t_i...]] (NP in Spec,AGRO)
 b. [...[_{VP} ...two girls...]] (NP in VP)
- (34) a. [two(x)]_Q [girl(x)]_{RC} [...knew x]_{NS} (proportional)
 b. [...knew two girls...]_{NS} (cardinal)

2.2.2. Agreement and interpretation

A second type of evidence for the present hypothesis would be a correlation between AGR as agreement and interpretation. Porteño Spanish illustrates such a correlation (Suñer 1988; see also Chicheŵa, Kiswahili, Hungarian (Runner 1994) and perhaps Hindi (Mahajan 1990, but see Butt 1993)). Suñer (1988) has argued that clitic doubling in Porteño Spanish is an agreement phenomenon; clitics are agreement heads (see also Borer 1984). What is interesting is that this agreement is possible only when the object NP is interpreted as specific. Compare (35) and (36):

- (35) a. *Diariamente, la escuchaba a una mujer que cantaba tangos.*
 daily, 3SG.F he/she-listened A a woman that sang tangos
 ‘Daily, he/she listened to a woman who sang tangos.’
 b. *La oían a Paca/la niña/la gata.*
 3SG.F they-heard A Paca/the child(f)/the cat(f)
 ‘They listened to Paca/the girl/the cat.’
- (36) a. *No (*lo) oyeron a ningún ladrón.*
 not 3SG.M they-heard A any thief
 ‘They didn’t hear any thieves.’
 b. *(*La) buscaban a alguien que los ayudara.*
 3SG.F they-looked-for A someone who 3PL.M help
 ‘They were looking for someone who could help them.’
 c. *(*Lo) alabarán al niño que termine primero.*
 3SG.M they-will-praise A the boy who finishes first.
 ‘They will praise the boy who finishes first.’

⁸ See de Hoop (1992) for some syntactic evidence for the claim that the two objects occupy different positions.

In (35), where the object NPs are interpreted as specific, agreement is allowed. In (36), where the objects are non-specific, agreement is blocked. If object agreement is triggered in Spec,AGRo, then the correlation between overt agreement and interpretation is predicted by the MH: the VP-external NPs, which trigger agreement, are interpreted quantificationally.

2.2.3. *Spec,AGRP position and interpretation*

A third type of evidence for the present hypothesis would be a correlation between Spec,AGRP position and interpretation. Such evidence is available in a number of languages. In Catalan (Solà 1992; see also Spanish (Solà 1992, Runner 1994) and Dutch (Rullmann 1989)), an indefinite NP in preverbal subject position, Spec,AGRP, can receive only a proportional reading (a); a postverbal (VP-internal) subject receives an existential (cardinal) interpretation (b):

- (37) a. Un roc ha caigut.
 a rock has fallen
 ‘One (of the) stone(s) fell.’
 (not: ‘a stone fell.’)
 b. Ha caigut un roc.
 has fallen a rock
 ‘A stone fell.’
- (38) a. Un cotxe ha passat.
 a car has passed
 ‘One (of the) car(s) went by.’
 (not: ‘a car went by.’)
 b. Ha passat un cotxe.
 has passed a car
 ‘A car went by.’

This shows a correlation between being in a Spec,AGRP position and interpretation. Once again, an NP which resides in Spec,AGRP receives a special (quantificational) interpretation. This follows from the MH, which claims that VP-external vs. VP-internal position is relevant to NP interpretation.

2.2.4. *VP-internal position and interpretation.* *English there sentences: towards an answer*

Since at least Milsark (1974) it has been known that the NP in an English *there* sentence is restricted in several ways. As illustrated in the following (i)

examples, no unambiguously ‘strong’ quantifiers are allowed. And those potentially ambiguous indefinites that are allowed receive only the cardinal, not proportional, interpretation, as illustrated by the (ii) examples:

- (39) a. i. *There is/are *all/both/every/each dog(s)* in the room.
 ii. There is/are *a/two/several/some/many dog(s)* in the room.
 b. i. *There arrived *all/both/every/each package(s)* at noon.
 ii. There arrived *a/two/several/some/many package(s)* at noon.
 c. i. *There appeared *all/both/every/each face(s)* in the window.
 ii. There appeared *a/two/several/some/many face(s)* in the window.

Throughout this section I have been arguing that quantificational readings of object NPs are derived if the NP resides in Spec,AGRo. If that is the only way to receive a quantificational reading, what (39) shows is that *there* sentences allow no interpretation that requires AGRoP. I claim that *there* sentences do not have an (active) AGRo projection and that is what accounts for this ‘quantificational restriction’.⁹

Another restriction on *there* sentences in English (see Belletti 1988) is that only (a subset of the) unaccusative predicates are allowed. This is illustrated by (39), above, as well as in (40), which contains unergative predicates. If an unergative predicate is made more ‘unaccusative’, the *there* sentence improves as in (41)a:

- (40) a. *There laughed a happy man at the party.
 b. *There sang an opera singer last night on TV.
 (41) a. ?There ran a tear down Bill’s cheek.
 b. *There ran a boy to the store.

Burzio (1986) argued that cross-linguistically one diagnostic of unaccusativity is the verb’s inability to assign accusative Case. On our current understanding of accusative Case-assignment, which assumes accusative Case is checked in Spec,AGRo (Chomsky 1992), Burzio’s generalization might be understood to mean that one special property of unaccusative predicates is that they do not contain an (active) AGRo projection. Thus, accusative Case cannot be checked.

The restriction on *there* sentences, that they occur only with unaccusative predicates, combined with the claim that unaccusatives contain no AGRo

⁹ Sten Vikner (personal communication) points out that it might be problematic to claim there is no AGRo projection in expletive constructions, generally, given the fact that past participle agreement is triggered in such constructions in a number of languages (see Vikner forthcoming). I might be forced to say that past participle agreement involves a separate AGR projection. I leave the question open for further research.

projection, suggests independently that *there* sentences contain no AGRo projection. The claim that AGRo is required for certain (quantificational) interpretations combined with the restriction of *there* sentences to clauses without AGRo, explains the observation that such readings are not allowed in *there* sentences. Thus the quantificational restriction illustrated in (39), above, is derived from the fact that *there* sentences lack AGRo.¹⁰

3. Reconstruction, mapping and AGR

In Section 1 I tried to show that the reconstruction asymmetries pointed out by Heycock (1992) could be explained if wh-phrases, like NPs, obey Diesing's (1992) Mapping Hypothesis. Thus, referential wh-phrases and proportional NPs are VP-external at LF, mapping onto tripartite structures, leading to their 'quantificational' interpretation. Non-referential wh-phrases and cardinal NPs are VP-internal at LF and do not map onto tripartite structures, accounting for their non-quantificational interpretation. Lumping referential wh-phrases and proportional NPs together is supported semantically, by their shared 'presuppositional' interpretation, and syntactically, by their lack of reconstruction effects, independently showing them to be VP-external at LF. Lumping non-referential wh-phrases and cardinal NPs together is supported semantically, by their shared non-presuppositional interpretation, and syntactically, by their triggering obligatory reconstruction effects, independently showing them to be VP-internal at LF.

In Section 2 I claimed that, in fact, the VP-external position that quantificational NPs move to is Spec,AGR. This was supported by cross-linguistic correlations between a quantificational interpretation and AGR (as Case, as Agreement, as a syntactic position). I also suggested that the quantificational restriction on English *there* sentences is best understood as a consequence of two independent facts: first, that *there* sentences are possible only with unaccusative predicates, which by hypothesis contain no AGRo projection (modernizing Burzio's generalization); and second, that a quantificational interpretation for an NP *requires* AGR. Together, these facts (I claim) conspire to rule quantificationally interpreted NPs out of *there* sentences, as desired.

Another prediction is made by combining the results of the previous two sections. The prediction is that in any construction lacking the relevant AGR

¹⁰ It is implicit in the above discussion that I do not accept the 'expletive replacement' account of *there* sentences (Chomsky 1991, 1992). There are a number of reasons, both syntactic and semantic, for rejecting it; among them is the loss of an explanation of the quantificational restriction discussed here (see Runner 1992 for details).

position--required for a quantificational interpretation--will not allow a referential, or referentially-interpreted wh-phrase. That is, referential wh-phrases (D-linked, or presuppositional ones), since they by hypothesis behave like quantificational NPs, mapping onto tripartite structures, are expected to be associated with Spec,AGR as are the quantificational NPs studied in Section 2. So, if no Spec,AGR position is available, no referential wh-phrase should be allowed. Conversely, such a construction should be amenable to a non-referential wh-phrase since it will not require AGR for its non-quantificational interpretation. English *there* sentences provide us just the testing ground needed: they arguably have no AGRO--the explanation for their quantificational restriction. These sentences should allow only non-referential wh-phrases. As has been noted by Heim (1987), this is, of course, correct:

- (42) a. [How many men]_i did you say there were t_i at the party?
 b. *[Which men]_i did you say there were t_i at the party?

In (42)a we see that a non-referential wh-phrase *how many men* can extract from a *there* sentence. However, a referential wh-phrase like *which men*, as (42)b shows, is impossible. *Which men*--but not *how many men*--needs AGRO; there is no AGRO in a *there* sentence; *which men* is thus excluded. I take such a contrast to be striking corroboration of what at first appears to be drawing together an odd bunch: wh-extraction, NP interpretation and AGR.

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References

- Adger, D. 1993. *Functional heads and interpretation*. [Diss. Univ. of Edinburgh.]
 Barss, A. 1986. *Chains and anaphoric dependencies*. [Diss. MIT, Cambridge.]
 Belletti, A. 1988. The Case of unaccusatives. *Linguistic Inquiry* 19, 1-34.
 Berman, S. 1991. *On the semantics and logical form of WH-clauses*. [Diss. UMass-Amherst.]
 Borer, H. 1984. *Parametric syntax*. Foris, Dordrecht.

- Burzio, L. 1986. *Italian syntax*. Reidel, Dordrecht.
- Butt, M. 1993. Object specificity and agreement in Hindi/Urdu. [Ms. Stanford.]
- Chomsky, N. 1991. Some notes on economy of derivation and representation. *Principles and parameters in comparative grammar*, ed. by R. Freidin. MIT Press, Cambridge.
- _____. 1992. A minimalist program for linguistic theory. *MIT Occasional Papers in Linguistics* 1. MITWPL, Cambridge.
- Cinque, G. 1984. A'-bound pro vs. variable. [Ms. Università di Venezia.]
- Diesing, M. 1992. *Indefinites*. MIT Press, Cambridge.
- Enç, M. 1991. The semantics of specificity. *Linguistic Inquiry* 22, 1-25.
- Heim, I. 1982. *The semantics of definite and indefinite noun phrases*. [Diss. UMass-Amherst, GLSA.]
- _____. 1987. Where does the definiteness restriction apply? Evidence from the definiteness of variables. *The representation of (in)definiteness*, ed. by E.J. Reuland & A.G.B. ter Meulen. MIT Press, Cambridge.
- Heycock, C. 1992. (Anti-)reconstruction and referentiality. [Ms. Yale Univ.]
- Huang, C.-T. J. 1993. Reconstruction and the structure of VP: some theoretical consequences. *Linguistic Inquiry* 24, 103-138.
- Kamp, H. 1981. A theory of truth and semantic representation. *Formal methods in the study of language: proceedings of the Third Amsterdam Colloquium*, ed. by J. Groenendijk, T. Janssen, & M. Stokhof. Mathematical Centre Tracts, Amsterdam.
- Kratzer, A. 1989. Stage-level and individual-level predicates. *Papers on quantification*. [NSF Grant Report, UMass-Amherst.]
- Mahajan, A. 1990. *The A/A-bar distinction and movement theory*. [Diss. MIT.]
- Meinunger, A. 1994. Case configuration and referentiality. [this volume.]
- Milsark, G. 1974. *Existential sentences in english*. [Diss. MIT]
- Rullmann, H. 1989. Indefinite NPs in Dutch. *Papers on quantification*. [NSF Grant Report, UMass-Amherst.]
- _____. 1993. Scope ambiguities in *how many* questions. [Ms. UMass-Amherst.]
- Runner, J. 1992. Expletives, 'replacement', and economy. *Catalan Working Papers in Linguistics* 1992, ed. by A. Branchadell et al. Universitat Autònoma de Barcelona.
- _____. 1993. Quantificational objects and Agr-o. *MIT Working Papers in Linguistics* 20: *Papers from SCIL V*. MITWPL, Cambridge.
- _____. 1994. A specific role for AGR. *University of Massachusetts Occasional Papers 17: Functional Projections*, ed. by E. Benedicto & J. Runner. GLSA, UMass-Amherst.
- Solà, J. 1992. *Agreement and subjects*. [Diss. Universitat Autònoma de Barcelona.]
- Suñer, M. 1988. The Role of agreement in clitic-doubled constructions. *Natural Language and Linguistic Theory* 6, 391-434.
- Vikner, S. forthcoming. Verb movement and expletive constructions in the Germanic languages. Oxford Univ. Press, Oxford.