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Emphatic Pronouns*

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In null subject languages such as Spanish, null and lexically overt pronouns show distinct interpretive behavior in contexts where both may appear. For example, in (1a), where both *pro* and *él* are licit, there is obviation between the matrix NP *Juan* and the overt pronoun, but not with the null pronoun. This contrast disappears in (1b), where only the overt pronoun is licit:

(1) a. Cuando { *pro* / él } trabaja, Juan no bebe.
when he work(PRES.3sg) Juan NEG drink(PRES.3sg)
'When he works, John doesn't drink'

b. Cuando { **pro* / él } y su mujer trabajan, Juan no bebe.
when he and his wife work(PRES.3pl) Juan NEG drink(PRES.3sg)
'When he and his wife work, John doesn't drink'

In this article we present an account of such behavior. Developing earlier proposals by Luján (1985,1986), we argue that interpretive differences between null and overt pronouns in Spanish derive from the fact that the latter undergo obligatory movement at Logical Form in any context "strong enough" to license the former:

(2) a. [... *pro* ...]
b. [él]$_i$ [... t_i ...]

This movement is analogous to focus assignment as analyzed by Chomsky (1976,1981), hence the anaphoric behavior of overt pronouns is explained in terms of their status as scoped, focal elements.

In section 1, we review the distribution of pronominals in Spanish, observing that in contexts where both null and overt pronouns may appear, their behavior is strongly parallel to the behavior of stressed and neutral pronouns (respectively) in English. In section 2, we introduce Chomsky's (1976) analysis of focus, and we show how the anaphoric properties of overt pronouns in Spanish and stressed pronouns in English follow under the view that they are focused elements undergoing movement at the level of LF. In section 3, we consider an important representation problem arising with bound foci, and, based upon it, we propose an elaborated internal syntax for focused phrases. Finally, in section 4, we address the question of why overt pronouns are obligatorily focused in Spanish, proposing that this derives from the null-subject status of Spanish, and from a constraint on the phonological identification of chains.

1.0 Spanish Null and Overt Pronouns and Their English Counterparts

Spanish sentence pairs like (3a,b) initially present themselves as a case of "free variation" in syntax - an alternation in pronoun form that does not correspond to any simple difference in truth-conditions:

(3) a. *Pro* trabaja.
b. Él trabaja.
'He works'

Nonetheless, native Spanish speakers intuit a clear difference in the two examples. This difference is usually described by saying that the latter carries an emphatic or contrastive force that is not present with the former.

Luján (1986) argues that the difference in pairs like (3a,b) in Spanish is analogous to what would be represented by a difference of stress or accent in English. Specifically, the null form (3a) is equivalent to the English (4a), with an unstressed third person pronoun, whereas the overt form is equivalent to the English (4b), with a stressed third person pronoun (where stress is represented by capitalization):

(4) a. He works.
b. HE works.

The use of (4b), like that of (3b), carries an emphatic or contrastive element. Thus, it may be used to convey (5a), where the contrast is understood "narrowly" - i.e., with respect to the stressed element alone, or to convey (5b), where the contrast is understood more "broadly" - e.g., with respect to both the stressed element and the predication:[1]

(5) a. He works, not someone else.
b. He is the worker, you are the thinker.

1.1 Obviation Effects in Preposed Adverbials and Subject Relatives

The parallel between Spanish overt and null forms and English stressed and neutral forms reveals itself not only in simple judgments of contrast, but also in the anaphoric possibilities available in certain syntactic contexts. Luján (1986) observes that lexical pronouns in Spanish show an obviation effect in preposed adverbial constructions. Thus whereas the null pronoun (*pro*) is naturally understood as coreferent with the name *Juan* in (6) and (7), the lexical pronoun (*él*) is not. (In (6) and the following underlining indicates coreference.) A similar effect is found with definite relative clause constructions in subject position, where the null pronoun is easily understood as coreferent with *mi hijo*, ‘my son’ in (8) and (9), but the lexical pronoun is not:

(6) Cuando { él / *pro* } trabaja, Juan no bebe.
when he work(PRES.3sg) Juan NEG drink(PRES.3sg)
'When he works, John doesn't drink'

(7) Cuando Juan trabaja, { él / *pro* } no bebe.
when Juan work(PRES.3sg) he NEG drink(PRES.3sg)
'When John works, he doesn't drink'

(8) Los trabajos que { él / *pro* } hace no satisfacen a mi hijo.
the jobs that he do(PRES.3sg) NEG satisfy(PRES.3pl) to my son
'The jobs that he does don't satisfy my son'

(9) Los trabajos que mi hijo hace no le satisfacen a { él / *pro* }.
the jobs that my son do(PRES.3sg) NEG him satisfy(PRES.3pl) to him
'The jobs that my son does don't satisfy him'

This effect disappears when the stressed pronoun is more deeply embedded in the main or subordinate clause (10)-(11). Likewise coreference becomes once again natural when the adverbial is no longer preposed (12) or when the definite relative is not in subject position (13):

(10) Cuando el director insiste en que { él / *pro* } trabaje,
when the director insist(PRES.3sg) on that he work(PRES.SUBJUNCT.3sg)
Juan no bebe.
Juan NEG drink(PRES.3sg)
'When the director insists that he work, John doesn't drink'

(11) Los trabajos que insisten que { él / *pro* } haga
the jobs that insist(PRES.3pl) that he do(PRES.SUBJUNCT.3sg)
no satisfacen a mi hijo.
NEG satisfy(PRES.3pl) to my son
'The jobs that they insist that he do don't satisfy my son'

(12) Juan no bebe cuando { él / *pro* } trabaja.
Juan NEG drink(PRES.3sg) when he work(PRES.3sg)
'John doesn't drink when he works'

(13) A mi hijo no le satisfacen los trabajos que { él / *pro* } hace.
to my son NEG him satisfy(PRES.3pl) the jobs that he do(PRES.3sg)
'My son isn't satisfied with the jobs that he does'

Strikingly, this same pattern of anaphoric possibilities is found with English neutral and stressed pronouns. Akmajian and Jackendoff (1970) observe that stressed pronouns in English also show disjoint reference in preposed adverbial constructions. Thus they judge that whereas the neutral pronoun is naturally understood as coreferent with the name *John* in (14) and (15), the stressed pronoun is not.[2] In our judgment, the same is true with definite relative clauses in subject position: the neutral pronoun is easily understood as coreferent with the name *John* in (16) and (17), whereas the stressed pronoun is not:

(14) When { *HE / he } works, John doesn't drink.

(15) When John works, { *HE / he } doesn't drink.

(16) The jobs that { *HE / he } does don't satisfy my son.

(17) The jobs that my son does don't satisfy { *HIM / him }.

Furthermore, as in the Spanish case, these constraints on natural coreference disappear when the overt pronoun in the matrix or subordinate clause is sufficiently embedded (18)-(19), when the adverbial is not preposed, or when the relative is not in subject position (20):[3]

(18) a. When the director insists that { HE / he } work, John doesn't drink.
b. When John works, the director insists that { HE / he } shouldn't drink.

(19) The jobs that they demand that { HE / he } do don't satisfy my son.

(20) a. John doesn't drink when { HE / he } works.
b. John is not satisfied with the jobs { HE / he } does.

Akmajian and Jackendoff (1970) characterize the facts in (14) and (15) in terms of simple coreference, describing their examples as permitting coreference between the names and neutral pronouns, but forbidding it between the names and stressed pronouns. This characterization appears too strong to us in view of discourses like those in (21)-(23), which show (14)-(15) embedded within larger contexts. In these contexts, coreference between the pronoun and the relevant NP seems to us not only possible but indeed natural in both the stressed and neutral cases:

(21) John allows other people to drink when they work, but
a. When { HE / he } works, John doesn't drink.
b. When John works, { HE / he } doesn't drink.

(22) My son is easily satisfied with the jobs other people do. However the jobs that { HE / he } does don't satisfy my son.

(23) Other people are perfectly happy with the jobs my son does, but the jobs that my son does don't satisfy { HIM / him }.

We believe that the obviation effects in (14) and (15), and, indeed, all of the examples discussed above, are better characterized in terms familiar from Binding Theory. In particular, the obviation in these sentences appears very similar to that found in (24a), where Binding Theory forbids the name and pronoun from being coindexed. As is well-known, contra-indexing between two phrases means that they are not required to be coreferent, and hence normally conveys that the two are not to be taken as coreferent. However, as Evans (1980) has forcefully argued, contra-indexing does not require the name and pronoun to be noncoreferent. Evans provides discourses like (24b), parallel to our (21)-(23), showing that coreference with such examples is possible, and even natural in certain cases:[4]

(24) a. He_i admires $John_j$.
b. Look fathead, if everybody admires John, then obviously he admires John.

In view of this result, we will characterize these data as showing that Spanish and English exhibit an important parallel in the indexation possibilities of lexical and stressed pronouns on the one hand versus null and neutral pronouns on the other. Lexical and stressed pronouns forbid coindexation in certain configurations while null and neutral pronouns permit it.

1.2 Contexts of Contrastive Emphasis

The parallel between Spanish overt and null forms and English stressed and neutral forms is also clearly observed in contexts which favor or disfavor contrastive emphasis. Consider the pairs in (25) and (26):

(25) a. Who does John think will win the award?
b. John thinks { *he / HE } will win the award.

(26) a. What does John think he will get in the competition?
b. John thinks { he / *HE } will win the award.

Answers to constituent questions typically require the correlate of the questioned phrase to be stressed or focused. Thus if (25a) is answered with a pronoun coreferent with the subject NP, the pronoun must be a stressed form. Furthermore, answers to constituent questions generally permit only the correlate of the questioned phrase to be stressed or focused. Thus if the answer to (26a) contains a pronoun coreferent with the subject NP, the pronoun must be unstressed since it is not the correlate of the questioned phrase. The Spanish data show the same pattern with null and overt pronouns. The equivalent of (25b) in Spanish requires a bound overt pronoun (27b). And the equivalent of (26b) in Spanish requires a bound null form (28b):

(27) a. ¿Quién cree Juan que ganará el premio?
who think(PRES.3sg) Juan that win(FUT.3sg) the award
'Who does John think will win the award?'
b. Juan cree que { *pro / él } ganará el premio.
Juan think(PRES.3sg) that he win(FUT.3sg) the award
'John thinks { *he / HE } will win the award.'

(28) a. ¿Qué cree Juan que obtendrá en ese concurso?
what think(PRES.3sg) Juan that obtain(FUT.3sg) in this contest
'What does John think he will get in the competition?'
b. Juan cree que { pro / *él } ganará el premio.
Juan think(PRES.3sg) that he win(FUT.3sg) the award
'John thinks { he / *HE } will win the award.'

Analogous effects are observed with discourses of the form shown in (29a) and

(30a). Pragmatically, these contexts favor the contrastive/emphatic reading of the embedded pronoun. (29a) naturally selects the interpretation where what nobody believes is "I, myself, am completely happy", and where *HE* is thus a bound stressed pronoun. Similarly (30a) favors the reading where Mark believes that he, in contrast to others, has actually passed. The relation between NP and the coreferent pronoun is binding here, as shown by the availability of sloppy identity reading with the elliptical VP (see Reinhart (1983) for discussion). Once again, the Spanish equivalents in (29b) and (30b) require a bound overt pronoun where English requires a bound stressed form, and forbid a null pronoun where English would forbid a neutral form:[5]

(29) a. Everyone believes that there are people who are completely happy, but NOBODY believes that { HE / *he } is completely happy.

b. Cada uno piensa que hay gente que es completamente
every one think(PRES.3sg) that there-be people who be(PRES.3sg) completely
feliz, pero NADIE cree que { él / **pro* } es completamente feliz.
happy but nobody think(PRES.3sg) that he be(PRES.3sg) completely happy

(30) a. Although most of the students think they have failed the exam, MARK thinks that { HE / *he } has passed, and so does Ann.
(ANN thinks that SHE has passed. "Sloppy")

b. Aunque la mayoria de los estudiantes cree que ha
although the majority of the students think(PRES.3sg) that have(PRES.3sg)
reprobado el examen, MARCO cree que { él / **pro* } ha
failed the exam Marco think(PRES.3sg) that he have(PRES.3sg)
pasado el examen, y Ana también.
passed the exam and Ana too
(ANA cree que ella ha pasado el examen. "Sloppy")

Finally, consider the appropriate form of an answer to question (31a) vs. an answer to (31b), where *who* and the two pronouns are to be understood as coreferential. Intuitively, the answer must use a stressed or neutral pronoun according to whether the pronoun in the question is stressed or neutral. Thus (32a) is an appropriate answer to (31a), and (32b) to (31b), but not conversely. The Spanish equivalents in (33)-(34) require answers in which null and overt pronouns appear where the English neutral and stressed forms do (respectively):

(31) a. Who thinks that he said that he is intelligent?
b. Who thinks that he said that HE is intelligent?

(32) a. I think that I said that I am intelligent.
b. I think that I said that **I** am intelligent.

(33) ¿ Quén cree que { *pro* / él } dijo que *pro* es inteligente?
who think(PRES.3sg) that he say(PST.3sg) that he be(PRES.3sg) intelligent
'Who thinks that he said that he is intelligent?'

(34) a. Yo creo que *pro* dije que *pro* soy inteligente.
I think(PRES.1sg) that I say(PST.1sg) that I be(PRES.1sg) intelligent
'I think that I said that I am intelligent'
b. Yo creo que *pro* dije que yo soy inteligente.
I think(PRES.1sg) that I say(PST.1sg) that I be(PRES.1sg) intelligent
'I think that I said that I am intelligent'

1.3 Null-Overt Pronoun Alternation

These results might be taken to show that overt pronouns in Spanish are "inherently" stressed or accented elements - that they are marked in the lexicon with whatever feature distinguishes stressed and neutral pronouns in English, and hence behave similarly to the former independent of syntactic context. Such a conclusion would be premature, however. As it turns out, Spanish lexical pronouns do not mimic the behavior of stressed pronouns uniformly, but rather only in positions where they alternate with null forms. This difference is intuitively clear to native speakers in examples like (35), where the pronoun is in PP object position - a position not permitted to *pro*:

(35) Hablan de él.
speak(PRES.3pl) about him
'They talk about him'

Here there is simply no perception of contrast or emphasis parallel to that intuited with (3b).

The point can also be illustrated with the counterparts of (6)-(9) above, where the lexical pronoun now occurs as a conjunct ((36) and (38)), as object of a preposition (37), and as the subject of a relative clause whose head is animate (39) - all positions forbidden to *pro*:

(36) Cuando { él / **pro* } y su mujer trabajan, Juan no bebe.
when he and his wife work(PRES.3pl) Juan NEG work(PRES.3sg)
'When he and his wife work, John doesn't drink'

(37) Cuando hablan de { él / *pro }, Juan se irrita.
when speak(PRES.3pl) about him Juan self irritate(PRES.3sg)
'When they talk about him, John gets irritated'

(38) Los trabajos que { él / *pro } y yo hacemos no satisfacen a mi hijo.
the jobs that he and I do(PRES.1pl) NEG satisfy(PRES.3pl) to my son
'The jobs that he and I do don't satisfy my son'

(39) La mujer que { él / *pro } ama odia a Juan.
the woman that he love(PRES.3sg) hate(PRES.3sg) to Juan
'The woman that he loves hates John'

The obviation effect noted in (6)-(9) is now suspended. The coreference between *Juan* and the pronoun, which was blocked in the alternating contexts, becomes natural in the non-alternating contexts. *Él* thus does behave like English stressed forms uniformly and independently of syntactic context. Rather it does so only in positions where it does not alternate with *pro*. Otherwise its behavior is parallel to that of a "normal" or neutral pronoun.

Summarizing, then, in contexts where both null and overt pronouns can occur in Spanish, their anaphoric behavior mimics that of neutral and stressed pronouns in English. On the other hand, in contexts where only lexical pronouns may appear, the overt forms behave like neutral pronouns; they are perceived as noncontrastive and non-emphatic by native speakers; moreover their anaphoric possibilities mimic those of the neutral, and not the stressed forms. These results raise the following two questions. First, what is the relation between lexicality, stress and pronoun interpretation in Spanish and English? Why are overt and stressed forms subject to obviation effects that are not found with null and neutral forms? And second, why do Spanish lexical pronouns behave like stressed elements in contexts that permit a null form, but not in "*pro*-less" contexts? What properties induce this behavior, and how?

2.0 Stress and Obviation

Our account of how lexicality and stress affect pronoun interpretation is based on remarks by Chomsky (1976) concerning similar phenomena involving proper names. (40)-(41) illustrate the kind of data Chomsky addresses:

(40) a. The woman he loves betrayed John.
b. Her mother loves Alice.

(41) a. The woman he loves betrayed JOHN.
b. Her mother loves ALICE.

As Chomsky observes, there is an important contrast in anaphoric possibilities with these pairs. Specifically, whereas the pronoun in (40) is easily read as coreferent with the unstressed or "neutral" names, such a reading is significantly less natural in (41) with the stressed names. That is, there is an obviation effect in the latter cases induced by stress.

Chomsky (1976) suggests that the obviation effect in (41) should be assimilated to that found in (42), in which the *wh*-phrase is not naturally read as binding the pronouns *he* or *her*.

(42) a. Who did the woman he loves betray t?
b. Who does her mother love t?

This assimilation can be made by analyzing the stressed phrases in (41) as quantifiers at the level of Logical Form (LF), which move, take scope, and bind a trace in their c-command domain. On this view, (41a,b) receive the LFs shown in (43a,b) (respectively):

(43) a. $[\text{John}]_i$ [the woman he loves betrayed t_i]
b. $[\text{Alice}]_j$ [her mother loves t_j]

Suppose now that configurations of the general form in (44) are excluded by the grammar, where XP is an A'-binding operator, and where *pro* is a pronoun that does not c-command the trace t_i - the Weak Cross-Over (WCO) Constraint:

(44) $*XP_i$ [[...pro_i...] ...t_i...]

Then the obviation facts in (41) and (42) are explained in a parallel way. (42a,b) will be ruled out on the structures in (45), with the *wh*-phrase, trace and pronoun all coindexed, since these structures will violate the constraint in (44). And because these structures are the ones that yield the readings in (46), where the *wh*-word binds the pronoun, it follows that these readings will be unavailable as well:

(45) a. $*\text{Who}_i$ [the woman he_i loves betray t_i]?
b. $*\text{Who}_j$ [her_j mother love t_j]?

(46) a. For which x, x a person, the woman x loves betrayed x
b. For which x, x a person, x's mother love x

Similarly, (41a,b) will be ruled out on the (LF) structures in (47), with the focused phrase, trace and pronoun all coindexed, since these structures will violate the

constraint in (44). And again, because these structures are the ones underlying the readings in (48), where the focused phrase binds the pronoun, these readings will also be unavailable:[6]

(47) a. *[John]$_i$ [the woman he$_i$ loves betrayed t$_i$].
b. *[Alice]$_j$ [her$_j$ mother loves t$_j$].

(48) a. for x = John, the woman x loves betrayed x
b. for x = Alice, x's mother loves x

As with the facts discussed earlier in section 1, it is important to observe that the obviation effect in (41) does not amount to a simple ban on coreference between the pronouns and names. This point is made by Rochemont (1978) with the discourse in (49). Rochemont observes that the final line of this dialogue contains an instance of (41a) in which the pronoun *he* and the name *John* are naturally construed as coreferent. A similar point holds with the discourse in (50) vis-a-vis (41b):[7]

(49) A: Sally and the woman John loves are leaving the country today.
B: I thought that the woman John loves BETRAYED Sally.
C: No. The woman he loves betrayed JOHN. Sally and she are best friends.

(50) A: Alice says that her mother doesn't like anybody.
B: That's not true. Her mother likes ALICE.

As noted by Horvath (1981), however, these results do not compromise Chomsky's account of (41). What is precluded on the quantificational analysis of focus are the readings in (48) where the pronouns are understood as bound by the focused phrases. However, this leaves open the possibility of the pronouns in (41) being unbound and referring independently to individual denoted by the focused element. These independent readings are represented in (51):

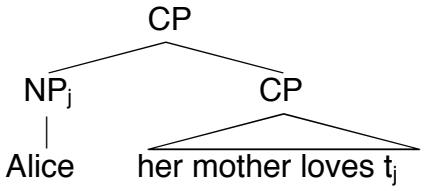
(51) a. for x = John, the woman John loves betrayed x
b. for x = Alice, Alice's mother loves x

These in fact seem to be the readings of (41a,b) as they occur in (49) and (50). The pronouns in question are not bound by the focused elements but rather refer independently, picking up their reference through the names used earlier in the discourse.

Our account of (41a,b) leaves open a number of details concerning the analysis of focus structures, the definition of c-command that applies to them, and the principles that rule out the configuration in (44). Regarding the first, we adopt the widely held view that focused elements are intrinsically broad elements, taking scope beyond other

quantifiers and *wh*-elements. Specifically, we will assume the proposal of Culicover and Rochemont (1983), May (1985), Rochemont (1986) that focused elements adjoin specifically to CP. For a simple example like (41b), this will imply an LF structure as in (52):[8]

(52)



Regarding the notion of c-command relevant to quantifier binding, we adopt the definition of May (1985) and Chomsky (1986) involving containment in maximal projections. Specifically, we assume the following (where α, β are categories):

Definition: α **contains** β iff all segments of α dominate β.
Definition: α **c-commands** β iff neither node dominates the other and every maximal projection containing α also contains β.

Following May and Chomsky, we take the notion of containment to distinguish between categories and segments of categories.[9] This distinction arises in adjunction structure like (52), where the upper and lower CPs are not understood as distinct occurrences of CP, but rather as segments of a single occurrence of CP. Under these definitions, items dominated by the lower CP in (52) are contained in CP since these are dominated by both segments of CP. By contrast, [$_{NP_j}$ *Alice*] is not contained in CP since one segment of CP - the lower one in (52) - fails to dominate it. This in turn means that the c-command domain of [$_{NP_j}$ *Alice*] may extend beyond CP when (52) occurs in some larger structure: [$_{NP_j}$ *Alice*] will c-command those items within the smallest maximal projection whose segments all dominate [$_{NP_j}$ *Alice*].

Finally, regarding the principle that rules out weak cross-over configurations like (44), we adopt a version of Safir's (1984) proposal that such structures violate a general "parallelism condition" on operator binding. This condition may be stated as follows:[10]

Parallelism Condition on Operator Binding (PCOB):
For any operator O and any x,y bound by O, x and y must be [α lexical].

According to the PCOB, two elements bound by an operator must be of equal "lexicality"; they both must be either null or both overt. This constraint rules out (45a,b) since the pronouns (*he*, *her*) bound by *wh*- amount to lexical variables whereas the traces (*t*) do not. In the same way, the PCOB rules out the focal structures in (47), and all examples showing the general WCO configuration in (44).

2.1 Obviation Effects with Adverbials

We suggest that obviation effects with Spanish lexical pronouns and with English stressed pronouns are closely analogous to those found in (41) discussed by Chomsky (1976). We propose to extend Chomsky's scopal analysis of the latter to account for the former.

Consider first sentences involving preposed adverbials, where (as we recall) obviation occurs between a focused pronoun and an NP, regardless of their relative position in the matrix or subordinate clause:

(6) Cuando { él / *pro* } trabaja, Juan no bebe.
when he work(PRES.3sg) Juan NEG drink(PRES.3sg)
'When he works, John doesn't drink'

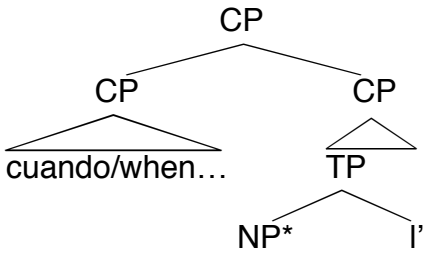
(7) Cuando Juan trabaja, { él / *pro* } no bebe.
when Juan work(PRES.3sg) he NEG drink(PRES.3sg)
'When John works, he doesn't drink'

(14) *When HE works, John doesn't drink.

(15) *When John works, HE doesn't drink.

These adverbial *cuando*/*when*-clauses appear to be CPs containing a *wh*- in specifier position. Reinhart (1983) argues that such preposed sentence adverbials are attached in a "high" position adjoined to a node above TP. We may identify this attachment site as CP:[11]

(53)



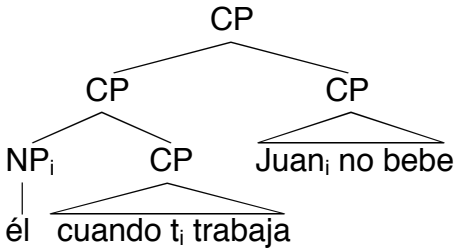
Reinhart urges this conclusion on the basis of data like those in (54), which show that coreference between (unstressed) names and pronouns is possible in either direction with a preposed sentence adverbial:

(54) a. When he works, John doesn't drink.
b. When John works, he doesn't drink.

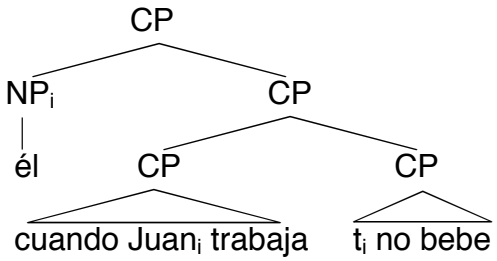
This result implies that the name and pronoun must be in mutually non-c-commanding positions. Hence it argues that the *cuando*/*when*-clause must be adjoined outside TP, the c-command domain of the subject (NP*).

Suppose now that Spanish lexical pronouns in positions licensing *pro* are analogous to stressed elements in English, and hence undergo focal movement at Logical Form, where they adjoin to CP. Then (6) and (7) will receive the LF structures in (55a,b), respectively. In (55a), the focused pronoun *él* adjoins to the adverbial CP, whereas in (55b), the focused pronoun adjoins to the matrix CP:[12]

(55) a.



b.



In the configurations in (55), the pronouns c-command the coindexed proper names under the definition of c-command in May (1985).[13] These structures are thus very close to the ones ruled out as WCO violations in the Chomsky (1976) analysis, with the difference that instead of having a raised name that binds a trace and pronoun, they show a raised pronoun that binds a trace and name.

Under our account, this situation is in fact ruled out by the same general principle that excludes the WCO structures in (45) and (47) - that is, by Safir's *Parallelism Constraint on Operator Binding*. The Spanish examples in (6) and (7) and their English counterparts in (14) and (15) are excluded by the PCOB in structures like (55) where the relevant names and pronouns are all coindexed. These structures violate parallelism since the pronoun in A'-position simultaneously binds a trace, which is [-lexical] and a name, which is [+lexical]. For these examples to be well-formed, it follows that the relevant names and pronouns must contra-indexed, and hence that they will be interpreted as referring independently.[14]

2.1.1 Embedded Focus. Recall that obviation with a focused pronoun is relaxed in Spanish and in English when the pronoun is embedded within the preposed adverbial or

within the matrix clause:

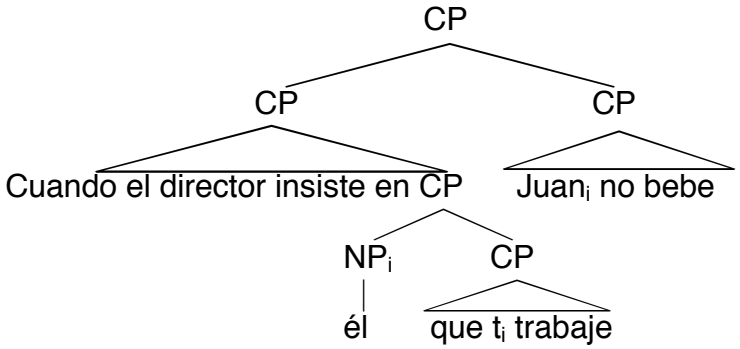
(10) Cuando el director insiste en que él / *pro* trabaje,
when the director insist(PRES.3sg) on that he work(PRES.SUBJUNCT.3sg)
Juan no bebe.
Juan NEG drink(PRES.3sg)
'When the director insists that he work, John doesn't drink'

(11) Los trabajos que insisten que { él / *pro* } haga
the jobs that insist(PRES.3pl) that he do(PRES.SUBJUNCT.3sg)
no satisfacen a mi hijo.
NEG satisfy(PRES.3pl) to my son
'The jobs that they insist that he do don't satisfy my son'

(18) a. When the director insists that { HE / he } work, John doesn't drink.
b. When John works, the director insists that { HE / he } shouldn't drink.

The scopal theory of focus explains this fact straightforwardly. Observe that in (10), (11) and (18) the extra clausal structure dominating *él* and *HE* will provide an additional adjunction site for the focused pronoun. For example, along with a structure in which the focused pronoun is attached to the matrix CP, (10), will also have the structure in (56), where the focused pronoun adjoins to the subordinate CP:

(56)



In the internal, CP-adjoined position, *él* fails to c-command the coindexed name at LF. Hence (10), with the indicated coreference, yields no A'-bound name, and hence no violation of parallelism. This predicts that the two may be coreferring.

The structure in (56) makes an interesting semantic prediction given the relation between the scope of focused elements and their interpretation. To see this, first

consider example (57) below:

(57) The director insists that JOHN work.

Intuitively, there are two ways of understanding the focus in (57). The latter may be taken as issuing from the director, as when the director says "I insist that John, and not someone else, work." This reading is associated with the LF representation in (58a), where the focused element remains within the embedded clause, and hence represents part of what the director insists upon. Alternatively, the focus may be taken as issuing from the speaker, as when someone has claimed that the director insists that Max work, and I, the speaker, disagree with them by uttering (57). This reading is associated with the LF in (58b), where the focused element moves out of the embedded clause, and hence is part of what the speaker insists be true and not the director:

(58) a. The director insists [$_{CP}$ John$_i$ [that [t_i work]]]
b. John$_i$ [$_{CP}$ the director insists [$_{CP}$ that [t_i work]]]

Observe now that if (56) is the correct structure for (10), we predict that (10) and the corresponding English sentence (18a), should have only the reading where contrast or emphasis is attributed to the director. Because the pronoun must remain within the embedded CP on pain of ungrammaticality, only an embedded focal reading should be available. These predictions are correct in our judgment. On their only available readings, (10) and (18a) are understood exclusively with focus attributed to the director and not to the speaker. Hence these facts provide additional support for the proposal made here.[15]

2.1.2 Non-preposed Adverbials. Obviation effects with lexical and stressed pronouns were also seen to be relaxed when their containing adverbial clause occurs post-verbally.

(12) Juan no bebe cuando { él / *pro* } trabaja.
Juan NEG drink(PRES.3sg) when he work(PRES.3sg)
'John doesn't drink when he works'

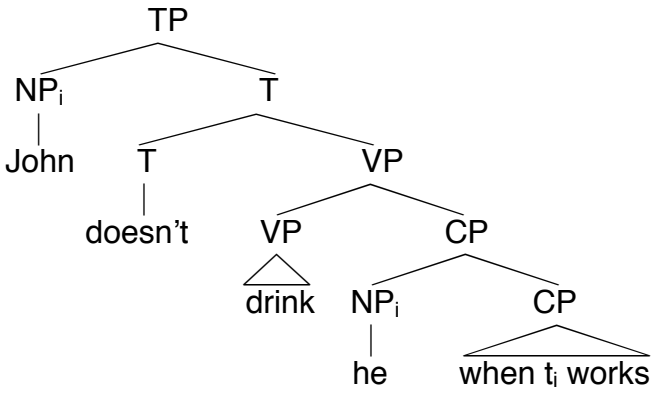
(20a) John doesn't drink when HE works.

Unlike preposed sentence adverbials, which adjoin to CP, postverbal adverbials like those in (12) and (20a) have a lower attachment site within VP. This is shown by simple examples like (59) in which the adverbial conjoins with VP and deletes with VP under ellipsis. A VP-internal attachment is also supported by binding facts. (60a,b) show that adverbial clauses exhibit Principle C effects between the main and subordinate subject when these clauses are postverbal. This argues that the adverbial is in the c-command domain of the subject NP in such structures, unlike in the preposed case:

(59) a. John [$_{VP}$ laughed when Mary came home] and [$_{VP}$ cried when she left again].
b. John [$_{VP}$ laughed when Mary came home] and Bill did [$_{VP}$ Ø] too.
(60) a. John doesn't drink when he works.
b. *He doesn't drink when John works.

Under TP analyses of the clause, a VP-internal adjunction for the adverbial clauses in (12) and (20a) will not correctly predict the lack of obviation in these examples. We can see this with the structure for (20a) in (61):

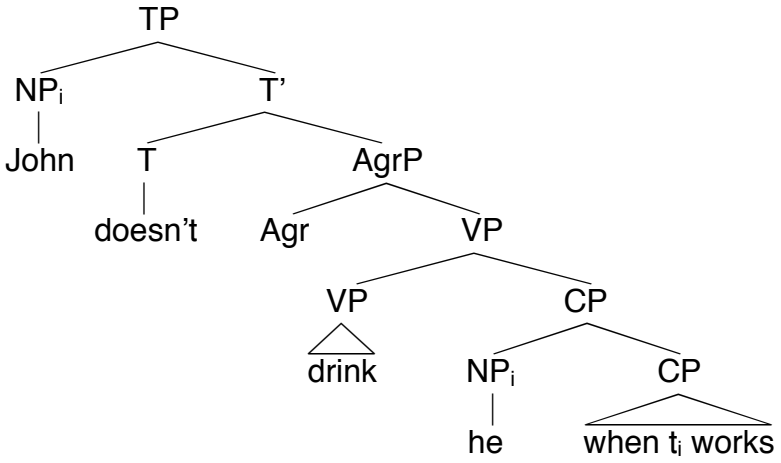
(61)



On the May (1985) definition of c-command that we are adopting, the adjoined focused pronoun will c-command all material within the smallest maximal projection whose segments all dominate it. In (61) the smallest such category is TP given that segments of both VP and CP fail to dominate the pronoun. Since the pronoun c-commands the subject in (61), the structure is incorrectly predicted to violate parallelism, just as in the preposed cases.

We suggest that the lack of obviation in (12) and (20a) can be accommodated under recent proposals by Pollock (1989), who suggests that the category TP of Chomsky (1981) should be factored into at least two maximal projections, including a Tense Phrase (TP) and an Agreement Phrase (AgrP). On this view (20a), for example, gets the revised structure in (62):

(62)



Here *he* is coindexed with the subject *John*, but now does not bind the latter. In (62), the smallest maximal projection whose segments all dominate *he$_i$* is AgrP. Hence under the May (1985) definition of c-command, *he$_i$* will c-command the material within AgrP but no higher items. There is thus no binding, and no violation of the parallelism constraint.[16] The obviation effect is correctly predicted to disappear: the name and pronoun can bear the same index.

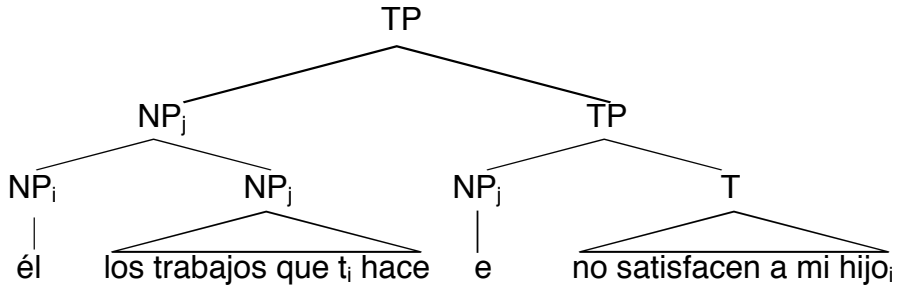
2.2 Obviation Effects with Relative Clauses

Our account of focal obviation with adverbials can be extended to accommodate the parallel facts with relative clauses; however doing so raises some interesting questions of movement and scope. Suppose that (8) and (9) are assigned the structures in (63a) and (63b), respectively, where the definite subject NP undergoes standard quantifier raising in the former, and *él* assumes an adjoined position analogous to that of the focused pronoun in (55a):

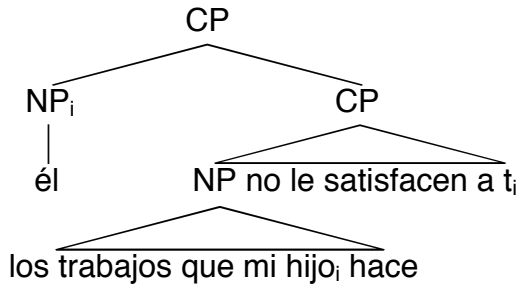
(8) Los trabajos que { él / *pro* } hace no satisfacen a mi hijo.
the jobs that he do(PRES.3sg) NEG satisfy(PRES.3pl) to my son
'The jobs that he does don't satisfy my son'

(9) Los trabajos que mi hijo hace no le satisfacen a { él / *pro* }.
the jobs that my son do(PRES.3sg) NEG him satisfy(PRES.3pl) to him
'The jobs that my son does don't satisfy him'

(63) a.



b.



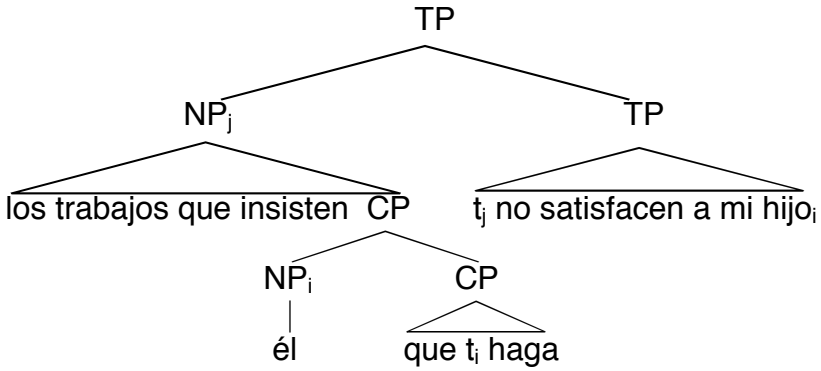
Then obviation will be predicted exactly as in the adverbial cases. In both these structures, the focused pronoun [$_{NP_i}$ *él*] will operator bind both its trace (t_i) and *mi hijo* ('my son'). This is a violation of the PCOB, and hence coindexing between *él* and *mi hijo* is correctly excluded.[17]

Furthermore, the account of why obviation disappears in certain cases will likewise extend from adverbials to the parallel facts with relatives. Thus sentences such as (11) and (19), in which the focused pronoun is more deeply embedded than in (8), can be assigned the structure in (64). The additional CP node provides a landing site for the pronoun from which it does not c-command *mi hijo (*'my son') at LF; violation of binding parallelism is thus avoided:

(11) Los trabajos que insisten que { él / *pro* } haga
the jobs that insist(PRES.3pl) that he do(PRES.SUBJUNCT.3sg)
no satisfacen a mi hijo.
NEG satisfy to my son
'The jobs that they insist that he do don't satisfy my son'

(19) The jobs that they demand that HE do don't satisfy my son.

(64)



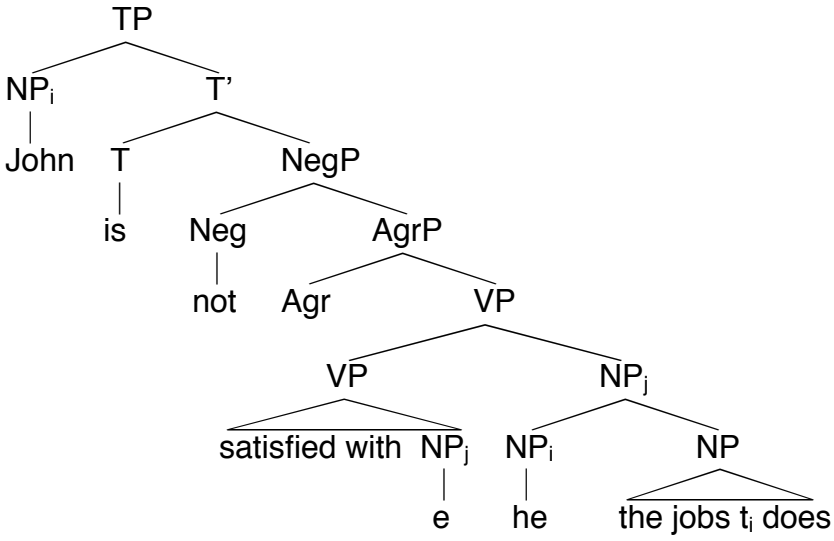
As in the adverbial cases, this proposal correctly predicts that when *mi hijo* and *él* are coreferent, the focused phrase must be remain embedded, and hence contrast or emphasis must attributed to the subject of *insistir* ('demand') and not to the speaker.

Finally, relatives in object position like (13) and (20b) will be correctly predicted to show no obviation effects assuming the Pollock-style structures discussed earlier, in which INFL elements such as Tense, Negation and Agreement are assigned independent projections. The latter, for example, will be assigned the LF in (65), where the definite NP object adjoins to (and thus takes scope within) VP and where the focused pronoun adjoins to the definite:

(13) A <u>mi hijo</u> no le satisfacen los trabajos que { <u>él</u> / *pro* } hace.
to my son NEG him satisfy(PRES.3pl) the jobs that he do(PRES.3sg)
'My son isn't satisfied with the jobs that he does'

(20b) <u>John</u> is not satisfied with the jobs <u>HE</u> does.

(65)



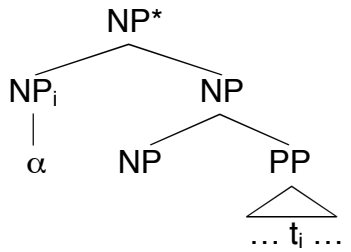
Again, under our definitions, *he$_i$* will c-command only the material within AgrP. Since the pronoun fails to c-command and hence to bind the subject, no violation of binding parallelism is induced.

These results are attractive in offering a simple and unified view of obviation with adverbials and relative clauses. Nonetheless, they also involve two important assumptions requiring further comment. The structure in (63a) assumes that elements can be extracted from a modifying relative clause and adjoined to its dominating NP node. It also assumes that focus movement need not only adjoin to CP, as proposed by Culicover and Rochemont (1983) and Rochemont (1986), but may adjoin to NP in certain cases. Let us consider these points in turn.

2.2.1 Focus Attachment to NP as "Inverse Linking". We believe that the first assumption - that elements can be extracted from a relative clause and adjoined to the dominating NP node - is supported by an important parallelism between our NP-adjunction structures and so-called "inverse-linking" structures.

May (1985) proposes that certain movements of quantifiers and *wh*- involve LF-extraction from a PP modifier with adjunction to a dominating NP node (66):

(66)



This structure is advanced on the basis of binding facts in examples like (67a,b). These sentences show a quantifier contained within a modifying PP that can be understood as binding a pronoun in the matrix clause:

(67) a. [$_{NP*}$ Someone [$_{PP}$ in every city]] despises it.
b. [$_{NP*}$ Three exits [$_{PP}$ from each freeway]] indicate its direction.

In order for the quantifier to bind the pronoun it must have scope over the latter at LF; however the quantifier is embedded within an NP that will block extraction under Subjacency. May proposes that the correct scope can be obtained without violating Subjacency if the indicated quantifiers are permitted to adjoin to their containing quantified NPs as in (68). Since they are not extracted from NP, the quantifiers do not violate the islandhood of NP; nonetheless, in their adjoined positions, *every city* and *each freeway* are not contained within the subject NP and hence obtain scope over the matrix clause, binding the pronoun:[18]

(68) a. $[_{NP^*}$ every city$_i$ $[_{NP^*}$ someone $[_{PP}$ in t_i $]]]_j$ t_j despises it$_i$.
b. $[_{NP^*}$ each freeway$_i$ $[_{NP^*}$ three exits $[_{PP}$ from t_i $]]]$ t_j indicate its$_i$ direction.

Interestingly, binding data parallel to the kind cited by May appear to be available with relative clauses. Consider the examples in (69) due to Keenan (p.c.) and Sells (1984). These sentences show a quantifier contained within a modifying CP that binds a pronoun in the matrix clause:

(69) a. $[_{NP^*}$ The language $[_{CP}$ every woman speaks best]] is her own.
b. $[_{NP^*}$ The man $[_{CP}$ each woman trusted most]] betrayed her.
c. $[_{NP^*}$ The one person $[_{CP}$ no boy likes to offend]] is his mother.

Here again, in order for the quantifier to bind the pronoun it must have scope over the latter at LF; however, the quantifier is embedded within an NP that will block extraction under Subjacency. Reasoning on analogy with May (1985), it is natural to propose that the correct scope is obtained without violating Subjacency by interior adjunction. That is, we get the right scope by adjoining the indicated quantifiers to their containing quantified NPs as in (70).

(70) a. $[_{NP^*}$ Every woman$_i$ $[_{NP^*}$ the language $[_{CP}$ t_i speaks best]]]$_j$ t_j is her$_i$ own.
b. $[_{NP^*}$ Each woman$_i$ $[_{NP^*}$ the man $[_{CP}$ t_i trusted most]]]$_j$ t_j betrayed her$_i$.
c. $[_{NP^*}$ No boy$_i$ $[_{NP^*}$ the one person $[_{CP}$ t_i likes to offend]]]$_j$ t_j is his$_i$ mother.

Once again, since they are not extracted from NP, the quantifiers do not violate the islandhood of NP. Nonetheless, in their adjoined positions, *every woman*, *each woman* and *no boy* are not contained within the subject NP and hence obtain scope over the matrix clause, binding the pronoun.

The view that (67) and (69) should be treated analogously is strengthened by the presence of parallel restrictions on quantifier choice. For reasons that are not well-understood, the availability of inverse-linking appears to depend on the determiners appearing in the adjoining NP and in the NP adjoined-to (71a-d); not any such pair is allowed. Interestingly, the same restrictions on quantifier choice with NP-PP structures appear to hold in NP-CP structures (72):

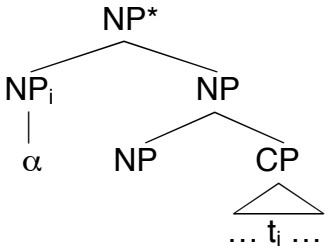
(71) a. Two persons from every city despise it.
b. No one from any mid-west city despises it.
c. ??Someone in no city despises it.
d. ??No one in every city despises it.

(72) a. Two languages that every woman spoke well were her own and her husband's.
b. No person that any boy met turned out to be his relative.
c. ??Some language that no woman speaks well is her own.
d. ??No language that every woman speaks well is her own.

In general it seems that quantified pairs that support inverse-linking with NP-PP also support it with NP-CP; and pairs that don't support inverse-linking with NP-PP do not support it with NP-CP.

These points lend support to the idea that quantifier adjunction structures of the kind we have assumed for relative clauses are indeed available. Alongside PP-adjunction structures like (66) we appear to have CP adjunction structures like (73):

(73)



2.2.2 NP Focal Scope. The second question for our analysis of obviation with relative clauses concerned the attachment site of the focused phrase. Under the proposals adopted above, we must abandon the view that focused elements adjoin uniformly to CP, and allow them to attach to NP as well in certain cases.

It is unclear to us, at present, how precisely to accommodate this point. One possibility would be to relativize the movement of focus phrases so as to compel them to take maximum possible scope with respect to a given choice of CP. On this idea, we essentially fix a CP domain for a given focused element α and require α to assume maximal scope with respect to it. In the usual case, this results in adjunction to the CP in question. But in cases where barriers prevent such movement, as in our relative clause examples, the principle would be satisfied by α assuming the widest scope possible with respect to barriers. Adjunction to NP would then represent such a maximal possible movement.

Another possibility would simply be to see focal movement as fundamentally similar to *wh*-movement, which has a preferred landing site in spec of CP, but also appears to allow adjunction to NP in the case of inverse-linking environments.

We must leave the choice among these options open at present, to be resolved by future research. If our proposals are on the track, however, it is clear that a broadening of the class of focus landing sites will be necessary.

3.0 Bound Foci and the Structure of Focused Phrases

In our earlier discussion, we noted that focused pronouns can be bound by higher quantifiers in certain instances and that focused elements can assume various scopal relations with respect to a higher clause-embedding verb. As it turns out, the conjunction of these two facts raises an important problem for the scopal theory of focus as developed so far. This problem suggests an interesting elaboration of the syntax of focus, shedding light on its quantificational nature.

3.1 A Representation Problem

Recall examples like (29a) and (29b) containing stressed and overt pronouns (respectively) coreferent with the matrix subject. Under the theory advanced here, such examples will involve a focal element bound in A'-position. Furthermore, these bound focal elements will assume either embedded or matrix scope:

(29a) Nobody believes that HE is completely happy.

(29b) Cada uno piensa que hay gente que es completamente
every one think(PRES.3sg) that there-be people who be(PRES.3sg) completely
feliz, pero NADIE cree que { él / *pro } es completamente feliz.
happy but nobody think(PRES.3sg) that he be(PRES.3sg) completely happy

On our theory as it currently stands, the reading of (29a) with bound, embedded focus will correspond to the LF in (76a), where the focused pronoun remains within the embedded clause, and is bound there by the trace of the quantified matrix subject. This reading can be represented informally as in (76b), where what nobody thinks is, in effect: "It is **I** who am completely happy":

(76) a. Nobody_i [$_{TP}$ t_i believes [$_{CP}$ he_i [$_{CP}$ that t_i is completely happy]]]
b. For no person x, x believes that for y = x, y is completely happy

By contrast, the reading of (29a) with bound matrix focus will presumably correspond to the LF in (77a), where the focused pronoun is adjoined to the matrix clause, and is bound by the adjoined quantifier *nobody*, which c-commands it under the definition in May (1985). This reading can be represented informally as in (77b), where no person thinks that a certain individual is completely happy, and where I, the speaker, contribute the information that the individual that nobody thinks is completely happy is that person himself or herself.

(77) a. He_i [$_{CP}$ nobody_i [$_{TP}$ t_i believes [$_{CP}$ that t_i is completely happy]]]
b. For no person x, for y = x, x believes that y is completely happy

This reading arises naturally in the context of correction, as, for example, when someone utters the sentence "Nobody thinks that anyone else is completely happy",

and I utter (29a) in disagreement.

Now observe that in view of the assumed binding between *nobody* and *he*, the representation in (77a) involves a serious grammatical violation. As a result of LF movement of the pronoun, the matrix subject trace t_i has come to c-command the embedded subject trace t_i with no intervening operator. This structure thus involves a strong cross-over violation (i.e., a Principle C violation), and so cannot, as it stands, be the correct representation for the bound, matrix scope reading of (29a). These results thus raise the following simple question: how do represent the binding between the quantifier and the focused pronoun in (29a) on the wide-scope reading of focus?[20]

3.2 A Solution: Focus Phrases as QPs

The correct answer to this question, we believe, is suggested by cases parallel to (29a) and (29b), but involving QPs headed by *only* and *even* in place of the focused pronoun:

(78) Nobody believes [$_{QP}$ only he] is completely happy.

Like (29a), (78) is ambiguous between a narrow and a wide scope reading for QP, where the pronoun is understood as bound by the quantifier *nobody* (see (79b) and (80b), respectively). These two readings correspond to two LF representations in which *only he* is adjoined inside and outside the scope of *believe* (see (79a) and (80a), respectively):

(79) a. Nobody$_i$ [t_i believes [[$_{QP}$ only he$_i$]$_j$ [t_j is completely happy]]]
b. For no person x, x believes that only for y = x, y is completely happy

(80) a. [$_{QP}$ Only he$_i$]$_j$ [nobody$_i$ [t_i believes [t_j is completely happy]]]
b. For no person x, and only for y = x, x believes that y is completely happy

However, observe that in sharp contrast with our focus example, no representation problem arises with the LF (80a) where *only he* takes widest scope. Under the definition of c-command given in May (1985), *nobody*$_i$ will bind *he*$_i$ since it c-commands the latter and is coindexed with it. But since the pronoun occurs inside a phrase *only he* with a different index, we avoid a strong cross-over violation: *only he* and *nobody* have different indices, and hence so do their traces.

This result suggests we might obtain a workable representation for focused phrases if we analyze the latter as occurring within a larger containing phrase. In particular, suppose we revise our view of focused phrases, analyzing them as largely identical to *only*- and *even*- phrases, but containing an empty quantificational element Ø in place of the overt Q:

$$\left\{ \begin{bmatrix} \text{Only} \\ \\ \end{bmatrix} \right.$$

(81) $[_{QP}$ Even $XP_i\ ]_j$
Ø

Then the representation problem with focus is resolved straightforwardly. In place of the LFs in (79a) and (80a), we will have the LFs in (82) and (83), respectively:

(82) $Nobody_i$ [t_i believes [[$_{QP}$ Ø he_i]$_j$ [t_j is completely happy]]]

(83) [$_{QP}$ Ø he_i]$_j$ [$nobody_i$ [t_i believes [t_j is completely happy]]]

(82) and (83) are both licit representations. In particular, (83), the structure corresponding to the wide scope, bound reading of the focused pronoun, involves no strong cross-over violation. Since *Ø he* and *nobody* bear different indices, their traces do as well, accordingly there is no Principle C violation with t_i and t_j.

The QP analysis of focus phrases evidently offers a simple, technical way to resolve the representation problem arising with (29a) and (29b). But it can also be motivated by reflection on a deeper correspondence holding between logical variables and indices. Consider again the informal logical translations given for the two readings of our *only* example in (78). Notice that these involve two distinct logical variables. There is a variable (*x*) associated with the quantifier phrase *nobody*. And there is another variable (*y*) associated with the QP *only he*. The semantic effect of the QP is to identify the values of these two variables ("only for y = x"), but the variables are nonetheless formally distinct. The syntactic counterparts of distinct variables in logical representation are traces bearing distinct indices. That is, distinct indices correspond to distinct variables. This correspondence holds for the *only* example: the logical representations in (79b) and (80b) contain distinct variables *x* and *y*, and the syntactic representations in (79a) and (80a) contain distinct indices *i* and *j*.

Observe, now, that in the case of focus examples, as represented in (76) and (77) the correspondence just noted breaks down: the logical representations in (76b) and (77b) contain two different variables *x* and *y*, however the syntactic representations in (76a) and (77a) contain only the single index *i*. This result arises precisely because the syntax of the focus phrase, as represented, is no "richer" than the element being focused. If all that is focused is the pronoun, then the index of the pronoun and that of the focused phrase must be the same. And this is just what causes the problem in (77a): because the quantifier and the focus phrase bear the same index, they can not both take wide scope without their traces interacting in the wrong way. The discrepancy between logical and syntactic representation thus independently suggests that the syntax of focused phrases must be more elaborate than what is given in (76) and (77). Specifically it suggests that focus phrases must bear an index distinct from the focused element itself. This is exactly what is achieved in (81).[21]

3.3 QPs and Cross-over

The QP-analysis of focus has a number of desirable features; however, it would also appear to entail an important problem as well. We earlier considered examples like (41b), whose ill-formedness was assimilated to WCO under the LF representation in (43b):

(41b) *Her mother loves ALICE.

(43b) Alice_i [her_i mother loves t_i]

Observe now that under the QP-analysis, the violation in (41b) is no longer straightforward. While the sentence does have a potential structure violating WCO, viz., (84), it also has a potential structure with no such violation, viz., (85):

(84) $[_{QP}$ Ø $\text{Alice}_i]_i$ [her_i mother loves t_i]

(85) $[_{QP}$ Ø $\text{Alice}_i]_j$ [her_i mother loves t_j]

An exactly parallel question arises for *only*- and *even*-phrases. The latter exhibit WCO in contexts analogous to (41b)? (cf. (86a,b)). However each has a natural LF structure in which no WCO violation is predicted (87):

(86) a. *Her mother loves only Alice.
b. *Her mother loves even Alice.

(87) $[_{QP}$ {only / even} $\text{Alice}_i]_j$ [her_i mother loves t_j]

Given the more complex structure available for focused phrases, how do we now (re-)capture the obviation effects that motivated our account in the first place? We believe the correct answer of this question lies in recalling a point made at the end of section 1.1 above, viz., that the obviation effects observable with focus are more correctly characterized in terms of binding than simple coreference. More precisely, we believe the readings represented by (85) and (87), in which the pronoun and name corefer, are in fact available. What remains unavailable, correctly in our judgments, are the bound readings.

To see what is involved here, consider informal logical representations for (84) and (85), respectively:

(88) a. for x = Alice, x's mother loves x
b. for x = Alice, Alice's mother loves x

In the former, the pronoun is bound by the operator, and its value varies with choice of variable assignments. By contrast, in the latter, the value of *her* is fixed as Alice. Observe now the two dialogues in (89), which distinguish the two readings in (88). The first favors the bound interpretation of *her* in *Her mother loves Alice* since the counterpart position in A's sentence is bound. As the star indicates, such a reading is unavailable. By contrast, the second dialogue favors the fixed interpretation of *her* since the counterpart position in A's sentence is fixed. Unlike the previous case, here the reading is in fact possible.

(89) a. A: No girl's mother loves her.
B: That's not true. *Her mother loves ALICE.
b. A: Alice's mother doesn't loves anyone.
B: That's not true. ?Her mother loves ALICE.

A similar result holds with *only* and *even*, as shown by the dialogues in (90). In the first, the natural interpretation for *Her mother loves only Alice* is as in (91a), with *her* bound. This reading is clearly unavailable. In the second dialogue, the natural interpretation for *Her mother loves only Alice* is as in (91b), with *her* coreferent with *Alice*. This reading is in fact available.

(90) a. A: Every girl's mother loves her.
B: That's not true. *Her mother loves only Alice.
b. A: Alice's mother loves her and her sister.
B: That's not true. ?Her mother loves only Alice.

(91) a. $[_{QP}$ only Alice$_i]_i$ [her$_i$ mother loves t_i]
only for x = Alice, x's mother loves x
b. $[_{QP}$ only Alice$_i]_j$ [her$_i$ mother loves t_j]
only for x = Alice, Alice's mother loves x

Thus what initially appears to be a problem for the QP account of focus actually turns out to be evidence in favor of it. If focus NPs are contained in a QP structure, which can bear an index different from NP itself, then we are able to exclude a reading of focus involving WCO (as in (89a) and (90a)), while at the same time permitting a reading involving simple coreference (as in (89b) and (90b)). We account for the presence of two potential readings of (41b) and (86a,b), of which one is systematically unavailable.[22]

4.0 Overt Pronouns and Focus in Null Subject Languages

The results with focus obtained above have direct relevance for the second major question raised earlier, viz.: why do Spanish lexical pronouns behave like English

stressed pronouns in contexts permitting a null form (*pro*)? Observe that if Spanish overt pronouns are always focused elements in such contexts, and if focus has the general character we propose, then strictly speaking, overt and null pronouns never occur in the same positions in Spanish - they are in complementary distribution. Thus in our pair (2a,b) (repeated below), the former will receive the structure in (92a), where *pro* occurs in subject position. Whereas, the latter will receive the structure in (92b), where *él* occurs within a QP occurring in subject position. Positionally, *pro* and *él* are thus disjoint:

(2) a. *Pro* trabaja.
b. Él trabaja.
'He works'

(92) a. [$_{NP}$ *Pro*] trabaja
b. [$_{QP}$ Ø [$_{NP}$ él]] trabaja

Given this outcome, it seems that our original question should be reformulated. Rather than ask why overt pronouns behave as focused elements in *pro* contexts, it seems that we should instead ask why overt pronouns are forbidden from *pro* contexts. For we now see that overt pronouns do not actually occupy the position of *pro*, but only appear to do so in certain cases - namely when the head of QP is phonologically null and hence the focus phrase surrounding the overt pronoun is "inaudible". If we can explain the complementarity of null and overt pronouns we will have explained the special behavior of the latter; for only embedded within a focus phrase can an overt pronoun appear to occur where *pro* does, and embedded within a focus phrase, an overt pronoun must then behave as a scopal element.

We suggest that the strict complementarity between *pro* and overt pronouns follows from the status of Spanish as a null subject language - specifically, from the properties of contexts in which *pro* is licensed.[23] To spell out our view, we adopt recent proposals by Rizzi (1986), who argues that *pro*-licensing, like the licensing of empty categories (ec's) generally, involves two basic conditions: (i) a structural condition on the position of the ec, and (ii) a material condition on the content of the ec - its values with respect to certain syntactic features such as person, number and gender (so-called "ϕ-features"). The two conditions proposed by Rizzi for *pro* are given in (93) and (94) (adapted from Adams (1987)):

(93) The position of *pro* is identified by a governing head α.

(94) The content of *pro* is identified by coindexation with α.

Thus a lexical category (typically INFL) structurally identifies the position of *pro*, and materially identifies the ϕ-feature content of *pro*. *Pro*-licensing is taken by Rizzi (1986)

to be a lexical property. Only certain heads in certain languages possess the property (e.g., Ts in Italian and Spanish); some languages are assumed to contain no heads that license *pro* (e.g., English on Rizzi's view).

Rizzi (1986) is noncommittal whether the feature identification of *pro* performed by INFL in null subject languages is to be viewed as a feature-assignment mechanism or a feature-agreement mechanism. Assume, however, that the former is the case - that is, assume that in contrast to lexical pronouns, which are inherently specified for ϕ-features, *pro* is inherently unspecified for f-features, and so must receive them by copying from a head. Furthermore, assume that like other principles of grammar, the rule assigning ϕ-features from INFL or other heads is essentially "blind" to status as a null category. That is, assume that the rule assigning feature content is sensitive only to the status of an item as a [+pronominal] element.[24]

Adopting these assumptions, consider now our earlier example (3), where *pro* and *él* are both taken to be in subject position. *Pro* has no intrinsic feature content, and receives ϕ-features by copying from INFL. *Pro* is thus materially identified as in (95a). But *él* also receives ϕ-features from INFL given its status as a [+pronominal] and given that the rule of ϕ-assignment applies blindly to all [+pronominal] elements. *Él* thus receives an additional set of ϕ-features despite its intrinsic feature content (95b):

(95) a. *Pro* INFL trabaja.
[+ϕ]

b. Él INFL trabaja
[+ϕ] [+ϕ]

We suggest that (95b) should be ruled out on grounds analogous to those excluding chains that contain more than a single theta-position, or chains bearing more than a single Case. That is, we suggest that there are constraints not only on the thematic- and Case-content of chains, but on their phonological content as well. This constraint may be given as in (96), where ϕ-features phonologically identifiy a chain, as discussed in Rizzi (1986). So just as chain identification must be unique for properties like theta-positions, Case, etc., chain identification must be unique for ϕ:[25]

(96) Chains must be uniquely identified phonologically.

Under this proposal, null and overt pronominals will be excluded from occupying the same syntactic sites. If *pro* gets its content by copying, which is blind to null vs. overt status, and if chains can contain at most a single phonological content, then any context "strong enough" to permit *pro* will be "too strong" to permit an overt pronominal. The latter will always run afoul of the phonological licensing condition that requires

chains to be uniquely "ϕ-identified". As a result, the apparent occupation of *pro*-positions by overt pronouns must always be merely apparent. The overt pronoun can at best be contained within a nonpronominal phrase (XP) in the position of *pro*, as in (97):

(97) [$_{XP}$ él] INFL trabaja.
[+ϕ] [+ϕ]

This is of course precisely the situation under our analysis: overt pronouns are contained within a dominating QP (recall (92b)); QPs are non-pronominal and hence do not undergo ϕ-feature copying from INFL.

In positions where *pro* is not licensed, all of these effects are predicted to disappear. Since *pro* is not identified by a head in such positions, "bare pronouns" will be able to occur without violation, and in particular, without a containing QP "shell". And since they can occur without a containing QP, such pronouns will not be forced to undergo focal movement, and the obviation effects associated with the latter are correctly predicted to vanish.

Notes

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1. We believe that "broad" vs. "narrow" understanding of contrast represents a case of simple vagueness; however, this point is not uncontroversial. Ronat (1979) and Rigau (1986) appear to propose that the two actually constitute different interpretations of focused elements, and hence that the latter are actually ambiguous between a broad and narrow reading - what they term a "distinctive" vs. a "contrastive" interpretation.

Standard conjunction tests support the view that the distinction is a matter of vagueness not ambiguity. Consider a discourse about two couples whose character traits are being discussed:

(i) A: Of the couple John and Mary, Mary is supportive, not John.
Of the couple Max and Sue, Sue is intelligent, Max is hardworking.
B: You've got things backwards. JOHN is supportive, and SUE is hardworking.

There seems no problem in understanding B's conjunction as involving a narrow notion of contrast in the first conjunct and a broad notion in the second, as in (ii). On the usual that conjunction requires parallel resolution of ambiguity, this is not ambiguity.

(ii) John is supportive, not Mary, and Sue is hardworking, whereas Max is intelligent.

It is also worth noting that broad and narrow contrast is observed with other items, such as *only*-phrases:

(iii) a. Only John came, not Mary.
b. Only John came, Mary stayed at home.

This fact casts serious doubt on the proposal by Rigau (1986) that broad contrast - her "distinctive" interpretation of a focal item - involves that item behaving as name-like, and so undergoing no movement at LF. If that proposal were correct one might expect weak cross-over effects with *only* in examples like (iv) to be ameliorated by a distinctive construal of the *only*-phrase. No such improvement is observed, however:

(iv) *His$_1$ mother loves only John$_1$.

2. An anonymous reviewer finds the pronoun variants of (14) and (15) acceptable on a coreferential reading of the indicated elements:

(i) a. When HE works, he doesn't drink.
b. When he works, HE doesn't drink.

As we discuss below, it is important to bear in mind the distinction between bound and independent readings. (ia) and (ib) appear straightforwardly unacceptable on the bound readings given in (ii):

(ii) for x = him, when x works x doesn't drink

To the extent that coreferential readings are possible, they seem to be the ones given in (iiia,b) (respectively), in which *he* and *him* refer independently to the same individual:

(iii) a. for x = him, when x works he doesn't drink
b. for x = him, when he works x doesn't drink

As we discuss, we are concerned here only with bound readings.

3. Luján (1986) observes obviation effects parallel to those in (12)-(15) in other languages showing null subjects; thus:

(i) I lavori che fa { *lei / Ø }, non soddisfano Anna. (Italian)
'The jobs that she does don't satisfy Ann'

(ii) Dlatego ze { *on / Ø } klamal, Marek zostal wyrzucony z pracy. (Polish)
'Because he lied, Mark was thrown out of work'

(iii) Os trabalhos que { *ele / Ø } faz não satisfazem o João. (Portuguese)
'The jobs that he does don't satisfy John'

(iv) { *Ta / Ø } yi zuo-wan shi, Zhangsan jiu huijia le. (Chinese)
'As soon as he finished his work, Zhangsan went home'

(v) { *kare-o / Ø } tasukete yatta hito-o John-wa korosita. (Japanese)
'John killed the person who helped him'

Such effects appear to be lifted in circumstances similar to those observed in Spanish (see Luján (1986) for details).

4. For further discussion of this point see Fiengo and May (1994).

5. The acceptability of examples like (29b)and (30b) and (33) below containing *él* directly contradicts the widely cited claim of Montalbetti (1984) that while null pronouns in Spanish may take a formal variable as their antecedent, overt pronouns are forbidden from doing so. As these sentences illustrate, not only can an overt pronoun take a variable antecedent, in certain cases it actually must do so. We believe that bound readings with lexical pronouns are quite generally available, and are indeed present with nearly all of the data discussed in Montalbetti (1984) in support of his basic claim. Thus, with regard to a typical pair like (ia,b) below, Montalbetti asserts that only the null pronoun can be understood as bound:

(i) a. Muchos estudiantes piensan que { *ellos / *pro* } son inteligentes
b. many students think(PRES.3pl) that they be(PRES.3pl) intelligent
'Many students think that they are intelligent'

For the second author, as for many other native Spanish speakers, this judgment is simply mistaken. (ia) does in fact have a fully acceptable bound reading. This reading is equivalent to what would be rendered in English by (ii), where the overt pronoun in focused:

(ii) Many students think that THEY are intelligent

We judge this result to be a welcome one from both an empirical and a conceptual standpoint. Empirically, as we have seen, Spanish null and overt pronouns pattern analogously to English neutral and stressed pronouns in many contexts - from the simplest cases like (2) and (3) to more complex cases with adverbs and relatives discussed above. Given this parallelism, and given that English examples with stressed pronouns like (ii) do admit a bound reading, the absence of a parallel reading for the Spanish example in (ia) would be highly surprising. The fact that it is available thus allows us to bring the two phenomena together in an attractive way.

Conceptually too, the fact that overt pronouns can take a variable as antecedent is a welcome one. In the Binding Theory of Chomsky (1981), lexical names and formal variables are grouped together into a single class as R-expressions, and are both subject to Principle C. With respect to the Binding Theory, then, the default expectation is that these two classes of elements, names and variables, will behave the same with respect to argument binding relations. Importantly, in the theory of Montalbetti (1984), this is expectation is not met: although names and variables behave analogously qua bound elements (both must be A-free), they do not behave analogously as binders: names can bind overt pronouns but variables cannot. Montalbetti's proposal thus cuts across the class of R-expressions erected by Binding Theory. The separation of names and variables in Montalbetti (1984) is also suspicious from the general standpoint of

quantification theory. Under the theory of quantification developed by Frege (1893), and championed more recently by Evans (1977) and Davies (1981), and under so-called "substitutional" approaches to quantification, the truth-conditions of quantified sentences such as *Every boy runs* are defined in terms of the truth of simple sentences like *Max runs*, *Bobby runs*, *Mark runs*, etc., where a name appears in the position of the variable. Semantically, then, the variable not only behaves like a name, it is actually replaced by a name in the course of interpretation. From this standpoint, the claim that names and variables behave differently with respect to the elements they can serve as antecedents for is highly suspect.

6. Rooth (1985) proposes an interesting alternative to the scopal theory of focus involving "domain selection". A consideration of Rooth's proposals for the data discussed here is beyond the scope of the present paper, however.

7. References to Rochemont (1978) and Horvath (1981) are drawn from Rooth (1985).

8. The assumption that focal movement involves adjunction to CP implies that CP structure is present even in simple finite clauses for examples like *JOHN left*.

9. May's analysis develops proposals by Aoun and Sportiche (1983).

10. The PCOB as given in the text broadens Safir's (1984) principle, which applies only to variables bound by an operator:

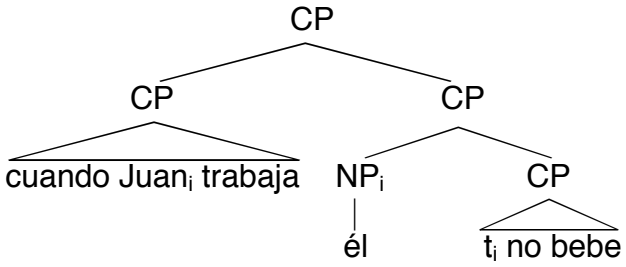
> **Parallelism Condition on Operator Binding**: For any operator O and any variables x,y bound by O, x and y must be [α lexical].

This broadening appears desirable on conceptual grounds. In the original PCOB, the term "variable" refers to items functioning semantically as variables, including pronouns, anaphors, traces, PRO, etc. Hence, as it stands, the PCOB applies to a class of elements that can only be given a unified definition in semantic terms. By extending the PCOB, we remove the implicit appeal to semantic terminology providing a purely formal characterization of the parallelism constraint: elements A'-bound by the same operator must be alike in lexical status.

11. Emonds (1985) argues that all adverbial clauses are in fact CPs.

12. If "interior" adjunctions are possible, an alternate structure for (55b) will be available in which the focused pronoun attaches to the smaller CP:

(i)



Note, however, that under the May (1985) definition of c-command adopted here, the adjoined pronoun will continue to c-command the contents of the higher adjoined adverbial. And hence the results with (i) vis-a-vis weak cross-over and binding are predicted to be identical to those with (55b) in the text.

13. Thus in (55a) and (55b), none of the CPs shown dominates the focused pronoun since in each structure there are segments of it that fail to dominate the pronoun. By convention, the scope of the pronoun is thus the entire sentence.

14. The scopal analysis also accounts straightforwardly for examples noted by Akmajian and Jackendoff (1970) involving obviation with focused antecedents rather than focused pronouns:

(i) a. *After he woke up, JOHN went to town. (= A&J's (2))
b. *If we don't invite him, JOHN will be mad.
c. *The woman who betrayed him hated JOHN.

At LF, these receive the structures in (ii) where *John$_i$* binds a pronoun that it does not c-command in underlying form:

(ii) a. *John$_i$ [$_{TP}$ [$_{TP}$ [$_{CP}$ after he$_i$ woke up] [$_{TP}$ t$_i$ went to town]]]
b. *John$_i$ [$_{TP}$ [$_{TP}$ [$_{CP}$ if we don't invite him$_i$] [$_{TP}$ t$_i$ will be mad]]]
c. *John$_i$ [$_{TP}$ [$_{TP}$ [$_{CP}$ the who betrayed him$_i$] [$_{VP}$ hated t$_i$]]]

The latter are all simple instances of WCO, analyzed similarly to (55a,b).

15. An anonymous reviewer points out that if this explanation is correct, then we also predict that embedding the proper name in place of the pronoun in (10), (11) and (18a,b) should not eliminate the obviation effect:

(i) a. Cuando él trabaje, el director insiste en que Juan no
when he work(PRES.3sg) the director insist(PRES.3sg) on that Juan NEG
bebe.
drink(PRES.3sg)

b. Cuando el director insiste en que Juan trabaje,
when the director insist(PRES.3sg) on that Juan work(PRES.3sg)
él no bebe.
he NEG drink(PRES.3sg)

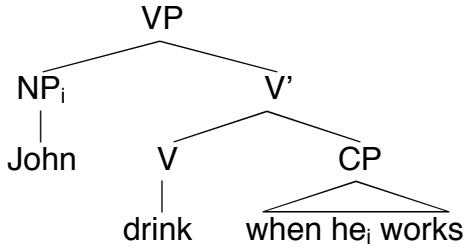
(ii) a. When HE works, the director insists that John doesn't drink.
b. When the director insists that John work, HE doesn't drink.

This prediction appears correct to us. In both (i) and (ii) there is obviation between the name and pronoun.

16. For developments of Pollock's proposals see Chomsky (1989). This account appears compatible with the so-called "VP internal subject hypothesis" of Kitagawa, Kuroda, Fukui, Fukui and Speas, and Koopman and Sportiche. On this theory, the TP subject originates within VP where it leaves an A-bound trace. Since it is within VP, this trace will fall within the c-command of the adjoined focused pronoun in (59); however, given the [-lexical] status of this trace, no violation appears to be predicted under the PCOB.

An alternative approach to these data is possible using structures in Larson (1988). In the latter, adjuncts take a low attachment as sisters to V (or V') and thus the VP in (62) receives the D-Structure in (i):

(i)



At S-Structure, the VP-internal subject *John* raises to TP (or TP) specifier position, and at LF, he$_i$ adjoins to CP. In the final structure, *he$_i$* c-commands the trace of *John*, which is an anaphor and non-lexical, but not *John* itself. Again, no violation of parallelism is thus induced.

17. We suppress irrelevant details in (63), such as the fact that *Los trabajos que mi hijo hace*, as a quantifier, will itself undergo QR and adjoin to the TP within CP.

18. As discussed by Safir (1984), examples of inverse-linking raise important questions vis-a-vis the PCOB discussed earlier since they would seem to violate parallelism of binding as in weak crossover. See Safir (1984) for further discussion.

19. Note that this would still allow an embedded focused phrase like that in (57) to

assume either of two scopes:

(i) [$_{CP1}$ The director insists [$_{CP2}$ that JOHN work]]

Fixing the embedded CP (CP2) as the domain of maximal scope, we will get an embedded adjunction for [*John*]. Fixing the matrix CP (CP1) as the domain of maximal scope, we will get a matrix adjunction for [*John*].

20. James Higginbotham (p.c.) has suggested to us that the problem in (77a) might be remedied by assuming that the focus phrase adjoins to VP. On this proposal, the wide scope bound reading of (29a) would be presented as in (i):

(i) nobody$_i$ [t_i [$_{VP}$ he$_i$ [$_{VP}$ believes [that t_i is completely happy]]]]

This solution is unattractive since it would abandon the important assumption that focus uniformly adjoins to CP (except in the "inversely-linked" cases discussed in 2.2.1 above). Furthermore, we believe it can be shown to be simply inadequate. Consider (ii):

(ii) John expects nobody to believe that HE is completely happy.

This example has a reading in which the quantifier binds the focused pronoun and <u>both</u> are understood as taking widest scope beyond expect. On this reading, VP adjunction to expect as in (iii) will not save the structure from the Principle C and Strong Crossover violations:

(iii) nobody$_i$ [John [$_{VP}$ he$_i$ [$_{VP}$ expects [t_i to believe [that t_i is completely happy]]]]]

We thus conclude that VP-adjunction is not an adequate solution to the wide-scope representation problem.

21. The claim that focused phrases are QPs analogous to *only* and *even* phrases is supported by further parallels. Thus, the class of categories subject to focus is quite similar to that which can occur in a QP headed by *only* or *even*:

(i) a.	John ATE the bagel.	(he didn't buy it)
	John [only ATE] the bagel.	(he didn't buy it)
b.	John found money NEAR the park.	(not in it)
	John found money [even NEAR] the park.	(not only in it)

Furthermore, such QPs typically show stress on their constituent XP, just as focused phrases show stress:

(ii) a. Only JOHN bought bagels.
b. Even JOHN bought bagels.
c. Ø JOHN bought bagels.

Finally, the semantics of focused XPs appears largely identical to what would be given by a QP headed by quantifier with the meaning of *exactly*:

(iii) a. JOHN bought bagels.
b. (?) Exactly JOHN bought bagels.

22. For many persons (including ourselves), the reading of (ia) not involving WCO (ib) is less accessible than the simple backwards anaphora reading of (iia) (that is, (iib)):

(i) a. Her mother loves ALICE.
b. for x = Alice, Alice's mother loves x.
(ii) a. Her mother loves Alice.
b. Alice's mother loves Alice.

We suggest this fact may reflect a "nondistinctness" effect for quantifiers whose range is fixed by a constant. More precisely, we suggest that speakers who find reduced acceptability for (ia) (on the intended reading) may be following a principle like that below, which preferentially identifies the indices of QP and XP when the latter denotes a constant:

P: If α is a QP of the form $[_{QP}$ Q XP$_i$ $]_j$, where Q = only, even, or Ø and XP is referentially independent, set *j* preferentially to *i*.

More informally, the idea is that when QP quantifies over a range fixed by a constant, QP is preferentially understood as behaving like that constant for the purposes of binding.

Under principle P, (41b) and (86a,b) induce WCO violations. All of these examples will have the structure in (iii), where the index of *Alice* and QP are identified, and hence where QP illicitly binds *her*:

(iii) $[_{QP}$ Q Alice$_i$ $]_i$ [her$_i$ mother loves t$_i$], where Q = only, even, or Ø

However (79) and (80) will produce no violation of WCO. QP and NP retain distinct indices because the latter is referentially variable, and hence falls outside principle P.

There is interesting evidence in favor of this proposal deriving from examples like (iva), pointed out to us by Dan Finer. Note that the lack of c-command (and hence binding) between *her*'s in (iva) entails that the latter is referentially independent. Under principle P, it follows that *her* and *only her* will bear the same index and induce a WCO

violation as LF (ivb):

(iv) a. *Her mother loves only her.
b. [$_{QP}$ only her$_i$]$_i$ [her$_i$ mother loves t$_i$]

Observe now that if the appeal to referential independence is correct, then we should be able to rescue the structure in (iva) by embedding it in a context where the pronoun inside QP can be bound. Consider (va), where QP takes narrow scope as in (vb):

(v) a. Alice thinks her mother loves only her.
b. Alice$_i$ thinks [$_{QP}$ only her$_i$]$_j$ [her$_i$ mother loves t$_j$].

Here the pronoun *her$_i$* is bound by *Alice*. Under the proposal above, this means that the indices of QP and *her* may remain distinct, voiding the WCO violation. For speakers who reject (iva), (va) is fully well-formed on the desired reading. Hence these data appear to support the view that WCO is here a function of the referential dependence versus independence of the QP-contained pronoun.

23. The view that obviation effects with Spanish overt pronouns result from the status of Spanish as a null-subject language is proposed in Luján (1985, 1986). For an independent approach to the complementarity between null and overt pronouns partially similar to that sketched below, see Soriano (1989).

24. In the terminology of Rizzi (1986) this can be put by saying that [+pronominal] items are obligatorily "head-bound" by a pro-licensing X^0, and that head-binding involves feature copying.

25. (96), and similar principles involving Case and Thematic assignment, might be generalized as in (i) below:

(i) Chains must be uniquely α-identified

where α ranges over relevant properties of chains. Thus α chain must be uniquely Case-identified, θ-identified, ϕ-identified.

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