"RICH" INFL AND THE LICENSING OF pro*

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In this paper, I would like to explore some properties of the pro module of UG, basing myself, primarily, on data from Modern Hebrew.

1.1

Let me begin with the null subject of inversion constructions. These have been discussed by a number of Hebrew linguists in the past (e.g. Borer 1983, 1985; Doron 1983). Let us assume, as is rather standard in the GB framework, that the empty subject position in these constructions is the null pronominal pro.

While Hebrew is basically an SVO language, word order is a great deal freer in Hebrew than in, say, English. In this respect Hebrew resembles the Romance null subject languages. Constructions with postverbal subjects in Hebrew fall into two descriptive categories which I label "free inversion" and "triggered inversion":

(1) Free Inversion

a. UNACCUSATIVE:    ne’elm-u    sfarim me-ha-sifriya.
                        disappeared-pl  books from-the-library
                        "books have disappeared from the library"

* I am grateful to N. Chomsky, K. Hale and L. Rizzi for comments on earlier drafts and for much valuable assistance. Thanks to H. Borer for very helpful discussions of the Hebrew data and to V. Deprez for judgements and suggestions on the French data. Errors and omissions are all my own.
b. PASSIVE:  
Sulma agra be-sax Smonim Sekel.  
"was paid fee for sum eighty Sekels"  
"an 80-Sekel fee was paid"

c. UNERGATIVE:  
tilfen avi-xa.  
telephoned father-you  
"your father telephoned"

(2) Triggered Inversion  
a. kol yom kona ha-yalda smalot.  
every day buys the-girl dresses  
"every day the girl buys dresses"

b. et ha-matana ha-zu  
.acc the-gift the-this will.give Dan to-mother-his  
"this gift, Dan will give to his mother"

b. et ma natan Dan le-im.  
.acc what gave Dan to-mother-his  
"what did Dan give his mother?"

"Free Inversion" occurs with unaccusative and passive verbs and with certain classes of unergative intransitive. Triggered inversion takes place with all verb classes. Both types of inversion are entirely optional and both can occur in both root and embedded contexts. The conditions under which inversion can take place are rather complex and involve considerations of focus and presupposition which I will not discuss. I will also assume that free inversion in Hebrew, with unaccusative and passive verbs, involves a VP-internal subject, as diagrammed in (3a), while free inversion with unergative predicates as well as all cases of triggered inversion adjoin the subject to VP in the manner of French Stylistic Inversion, (3b), (cf. Kayne and Pollock 1978). There is Hebrew-internal evidence for these structures which I will not review here, (cf. Borer and Grodzinsky 1986). Suffice it to note that the definiteness effect, which is typically associated with VP-internal subjects, is suppressed under triggered inversion, suggesting that the subject in such cases is adjoined to, rather than inside the VP.1

1 The situation is more complex: The derived word order of triggered inversion is [trigger VSO] and not [trigger VOS] as is expected given structure (3b). In
As the structures I have assigned to the inversion constructions indicate, I am assuming that the pre-verbal subject position is occupied by a null expletive subject, a pro. The question I would like to address is, what are the licensing-conditions for pro?

As shown by (1) and (2), inversion is possible with third person agreement in both the present, past and future tenses. Thus, in (1a), we have inversion with a third person plural, in (1b) and (1c), third person singular agreement. In (2a) the verb is in the participial, present tense and in (2b) and (2c) the tense specification is future and past, respectively. This state of affairs contrasts with argumental pro-drop in Hebrew which, as Borer (1983) has shown, is restricted to the first and second person in the future and past tenses. Whatever conditions must be met in order for an argumental pro to be licensed, and I will address those in the latter part of the paper, it appears that those conditions are relaxed for a null expletive, since it

Shlonsky (1987) I argue that the postverbal subject is adjoined to VP on the left and the verb raised to INFL at S-Structure, as diagrammed in (i):

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may appear in a wider range of environments. This, precisely, is the 
observation of Rizzi (1986) who suggests that an expletive pro need 
only be formally licensed whereas an argumental pro must be 
assigned grammatical features (f-features) by association with the 
licensing head. Rizzi separates the notion of formal licensing from 
content assignment, or recoverability, (4):²

(4) pro MODULE (Rizzi 1986)
   a. Formal Licensing:
      pro is Case-marked by Xₙ
   b. Feature Assignment/Recoverability:
      Let X be the licensing head of an occurrence of pro: Then pro has the 
grammatical specification of the features on X coindexed with it.

In this framework, Hebrew can be described as a language where 
pro is formally licensed, hence null expletives are attested, but where 
feature assignment is restricted to first and second person past and 
future inflections.

1.2

Consider, now, the array of facts illustrated in (5)-(7). While 
direct objects may be long extracted in Hebrew, as shown by the 
acceptability of (5-7a), a subject of an unaccusative or passive verb 
may not be extracted over a wh-island, (5-7b):

(5) a. (et)ma lo yada-ta ‘im Dani hepil?
   (acc) what neg knew+2ms whether Dani dropped+3ms
   “what didn’t you know whether Dani dropped?”

b. `?ma lo yadat’a ‘im nafal ’al ha-ricpa?
   what neg knew+2ms if fell+3ms on the floor
   “what didn’t you know whether fell on the floor?”

(6) a. eize sfarim ein-ex yoda-’at lama ha-studentim gonzvim me-ha
   which books neg+2fs know+2fs why the-students steal from-the
   sifriya?
   “which books don’t you know why the students steal from the library?”

b. `eize sfarim ein-ex yoda-’at lama ne’elamim me-ha-sifriya
   which books neg+2fs know why disappear-pl. from-the library
   “which books don’t you know why (they) disappear from the library?”

² I follow Rizzi in remaining neutral on the question whether features are 
assigned to an otherwise featureless pro, or recovered from a pro which is generated 
with features.
(7)  a. eize manhig lo yadata 'im ha-C.I.A. racax?
   which leader neg knew+2ms if the-C.I.A. assassinated
   "which leader didn't you know whether the C.I.A. assassinated?"

   b. *eize manhig lo yadata 'im nircax (al-yedei ha-C.I.A.)
   which leader neg knew+2ms if was-assassinated (by the-C.I.A.)
   "which leader didn't you know whether (he) was assassinated (by the
   C.I.A.)?"

If the trace of the extracted subject was in the [NP/S] position, the unacceptability of (5)-7b) could be straightforwardly explained as an ECP violation, since the trace of the extracted subject would not be properly governed. However, we have seen that subjects of unaccusative and passive verbs may appear in their D-Structure q-position which is the structural direct object position. The question is why a trace of an unaccusative subject is illicit in exactly the same structural position where a trace of an object is fine. What rules out a representation such as (8b) while allowing (8a)?

(8)   a. wh... [CPwh [IPDani [vpdropped t]]]
   b. *wh... [CPwh [Ipro; [vpfell t]]]

Under the assumption that extraction of the subject may proceed from the postverbal \(\theta\)-position, an appeal to the ECP cannot be made. This is so since the traces in both (8a) and (8b) are properly governed. In a discussion of related facts in French, to which I return, Pollock (1986) construes the representation in (8b) as a Binding Condition C violation. The variable is bound by pro within the domain of its operator in (8b), constituting a Strong Cross-Over violation, but it is free in (8a).

While such an account is attractive at first sight, it is belied, I think, by such data as that in (9), noted first in Borer (1983), which show that LF-extraction of an inverted unaccusative subject may proceed freely and the subject/object asymmetry characteristic of S-Structure extraction is eliminated in LF. Thus, the subject when-in-situ in (9a) shows no superiority effects when it is postverbal. In preverbal position it is ruled out, as shown in (9b), presumably by the ECP.

Similarly, a negative quantifier in (10a) can be associated with a scope marker in a higher clause whereas it cannot when appearing in the preverbal subject position. The examples in (11) show that direct objects pattern like the inverted subjects, as is to be expected. Surely, if Condition C is to be invoked, both S-Structure and LF extraction should be ruled out:
(9) a. ma kana mi?
   what bought who

b. *ma mi kana?
   what who bought

(10) a. ein-eni xo Sev-et Se-nir'a 'iS ba-rexov.
    neg-1s think-2fs that-was seen anyone in-the street
    "I don't think that anyone was seen in the street"

b. *ein-eni xoSev-et Se-'iS ni'ra ba-rexov.
    neg-1s think-2fs that anyone was seen in-the street
    "I don't think that anyone was seen in the street"

(11) a. mi kana ma?
    who bought what

b. ein-eni xoSev-et Se-hu ra'a 'iS ba-rexov.
    neg-1sg think-2fs that-he saw anyone in-the street
    "I don't think that he saw anyone in the street"

Before proceeding, let us note that the same range of facts can be reproduced with VP-adjoined subjects, which appear, for example, under triggered inversion. In the (a) examples of (12) an object is *tob*-moved and in (13) it is relativized. Subject extraction is blocked in both cases, as in (12-13b):

(12) a. (et) ma lo yadata le-mi natan Dani?
    acc what neg you know to-who gave D.
    "what didn't you know to whom Dan gave?"

b. *mi lo yada'at be-eize Sa'a metapes al ha-har?
    who neg you knew at-what time climbs up the mountain
    "who didn't you know at what time climbs up the mountain?"

(13) a. ze ha-'iS Se-xana lo sa'ala mi hekik.
    this the-man that-Hannah neg asked who knew
    "this is the man that Hanna didn't ask who knew"

b. *ze ha-'iS Se-xana lo Sa'ala et mi hekik.
    this the-man that-Hanna neg asked acc who knew
    "this is the man that H. didn't ask who (he) knew"

The same reasoning which ruled out an ECP account for the extraction facts with the VP-internal subjects can be carried over to these cases. The availability of LF extraction, as shown by the contrast in (14), can again be taken as evidence against a Binding theoretic explanation:
(14) a. mi lo yada ex oxeł mi et ha-gvina?
   who neg knew how eats who acc the cheese
   "who didn’t know how who eats the cheese?"

b. "mi lo yada ex mi oxeł et ha-gvina?
   who neg knew how who eats acc the cheese

More generally, the parallelism between VP-internal and VP-adjointed subjects strongly suggests that it is not the trace of \( w_b \)-movement which is offensive. How, then, are we to account for the fact that Hebrew mimics the Italian paradigm in LF, permitting long-distance \( w_b \)-movement of a subject, while patterning like English at S-structure, blocking a parallel type of movement?

1.3

My approach will be to relate the possibility of postverbal subject extraction to the licensing principles for null subjects. I will show that expletives in inversion constructions are subject to a requirement more restrictive than formal licensing.

Indeed, I will claim that the \( pro \) module treats on a par expletives associated with postverbal subjects and null arguments. This consequence follows, I suggest, from Chomsky’s Expletive Replacement Hypothesis, which has the result that the distinction between argumental \( pro \) and expletive \( pro \) is obliterated in LF.

Some direct evidence that the principle violated in (5)-(7) and again, in (12)-(13) above, concerns the preverbal \( pro \) and not the postverbal trace itself, is given in (15). In (15b-c), with the verbal inflection for first and second person, extraction of a subject over a \( w_b \)-island is considered fine. To recall, it is precisely in the environment of first and second person agreement that argument \( pro \)-drop is possible in Hebrew, as shown in (16b-c). The ungrammaticality of (15a), should be correlated with (16a), where argument \( pro \)-drop is unacceptable:

     X, no one neg asked-3ms why left-1ms acc the-party early
     “Haym, nobody asked why (he) left the party early”

b. ani ve-at, af exad lo Sa’al lama ‘azav-nu et ha-mesiba
   I and-you, no one neg asked-3ms why left-1pl acc the-party
   mukdam.
   early
   “me and you, nobody asked why (we) left the party early”
UR SHLONSKY

c. ata ve-Xaym, af exad lo Sa’al lama ’azav-tem et ha-mesiba you and Xaym, no one neg asked-3ms why left-2pl acc the-party mukdam.
early "you and Haym, nobody asked why (you) left the party early"

(16) a. *azav.
   pro left+3ms
   "he left"

b. azav-nu.
   pro left+1pl
   "we left"

c. azav-tem.
   pro left+2pl
   "you (pl) left"

Thus, this paradigm shows that the possibility of extracting a subject correlates with the capacity of AGR to license argumental pro drop. Now, the mere fact that subject inversion, i.e., without extraction, is acceptable in Hebrew means that pro must be formally licensed in Hebrew just like it is in, say, Italian and unlike, say, English. Put differently, the account of these Hebrew facts must concede that the availability of expletive pro depends on more than formal licensing. The generalization that, I think, must be drawn from the Hebrew facts is that pro must be associated with phonologically overt grammatical features at S-structure. Under inversion, the postverbal NP itself supplies these features, by being coindexed with pro, which it must be, since it replaces it in LF. Extraction of a postverbal subject strands pro, so to speak, since the features borne by the trace are phonologically null.

As a first approximation, then, I propose to substitute (17) for the feature assignment procedure, given above in (4b):

(17) Feature Assignment/Recoverability
Coindex pro with phonologically overt grammatical features.

We now interpret richness of agreement as an S-structure property of the phonological explicitness of the representation of grammatical features. In Italian, for example, AGR is rich in virtue of overtly representing f-features. The features of pro are thus fully recoverable from AGR alone. A postverbal subject may thus be freely extractable; and it is. In Hebrew, overt features of person are represented in the first and second person conjugations in the past and future.

Consequently, only with such agreement can postverbal subjects
be extracted. The third person marker, though, is discretely represented, by, say, the absence of features in the past tense. This suggests that the notion of phonological overtness is insufficient to characterize Hebrew pro-drop. I will address this issue shortly and will argue that the third person marking in Hebrew marks the feature impersonal and does not designate a person. This predicts that only impersonal subjects may be dropped with third person agreement; the prediction turns out to be valid, as we shall see. However, since our purpose is to demonstrate that null expletives and null arguments are treated the same way by the pro module, let us proceed, for the present, under the assumption that Hebrew AGR is impoverished in the third person. Since the feature assignment procedure for pro takes place at S-structure, it is predicted that postverbal subjects may be freely extracted in LF, since, at LF, and only in LF are the overt features no longer needed for assignment to pro, since it is eliminated by expletive replacement.

1.4

Confirmation for the approach advocated here comes from French. Consider (18)-(20), data discussed in Pollock (1986):

(18) a. Il faudrait que viennent plus de linguistes à nos réunions.
    b. *Combien de linguistes faudrait-il que viennent à nos réunions?

(19) a. J’aurais aimé que soient condamnés plus de coupables.
    b. *Combien de coupables aurais-tu aimé que soient condamnés?

(20) a. Pierre a nié qu’aient été relaxés des criminels.
    b. *Combien de criminels Pierre a-t-il nié qu’aient été relaxés?

The a. examples in this paradigm illustrate inversion of the subject in a subjunctive clause, which is an environment in which this sort of inversion is possible. Following Pollock, let us assume that the preverbal position is occupied by an expletive pro. Thus, (18a) should be represented roughly as (21):

(21) Il faudrait que [IP pro; viennent [NP plus de linguistes]; à nos réunions]

Like Hebrew, the postverbal subject cannot be extracted, as shown by the unacceptability of the b. examples in (18)-(20). Let us hypothesize, as seems plausible, that pro in French is formally licensed, as it is in Italian. French differs from Italian, however, in
that agreement is less phonologically explicit. Thus, French patterns like Hebrew in requiring that pro’s features be recovered or assigned by the postverbal NP itself. The parallelism with Hebrew, if true, engenders the prediction that the postverbal subject be extractable in LF, a prediction borne out by the wh-in situ examples in (22):

(22)  
a. Qui aurait aimé que soient condamnés combien de coupables?
b. Qui a niait qu’aient été relaxés combien de criminels?

Now, unlike Hebrew, French has an overt expletive, il. When pro in the sentences in (18)-(20) is replaced with il, a postverbal subject is freely extractable. This is illustrated in (23)-(25):

(23)  
a. Il faudrait qu’il vienne plus de linguistes à nos réunions.
b. Combien de linguistes faudrait-il qu’il vienne à nos réunions?

(24)  
a. J’aurais aimé qu’il soit condamné plus de coupables.
b. Combien de coupables aurais-tu aimé qu’il soit condamné?

(25)  
a. Pierre a nié qu’il ait été relaxé des criminels.
b. Combien de criminels Pierre a-t-il nié qu’il ait été relaxé?

Under the theory proposed here, the extractability of the postverbal subject under il receives a natural explanation. Since the sentences involve an overt expletive, which is endowed with overt grammatical features, and not a null expletive, the conditions of the pro module are trivially satisfied and a postverbal subject may be freely moved.¹

Let me mention another, more tentative consequence.² Under the account I am developing, an expletive pro in languages with impoverished agreement features must be supported by overt features assigned by the postverbal subject itself. If the postverbal subject is extracted, pro is stranded because its features cannot be recovered by the overt environment. Now, certain languages permit

¹ Note that French does not allow construal of an embedded quantifier such as personne with a matrix scope marker even when the quantifier is a postverbal subject, (i). Thus, (i) is judged comparable to (ii), where personne appears in the [NP/S] position. The fact that no improvement occurs when pro is replaced by il, as in (iii) suggests that there are independent reasons barring long distance scope construal of a subject quantifier. In this respect, French differs from Hebrew (cf. (10)):
   (i) "il ne faudrait que vienne à nos réunions personne.
   (ii) "il ne faudrait que personne vienne à nos réunions.
   (iii) "il ne faudrait qu’il vienne à nos réunions personne.

² I am grateful to R. Kayne, (p.c.) for pointing out this consequence.
extraction from inside a subject. Specifically, both French and Italian allow the head of a QP to be extracted, leaving behind its specifier. I conjecture that in a language like French extraction of a quantifier ought to have an intermediate status: Sentences in which a bare quantifier is extracted ought to be marginally better than sentences where the entire subject has been moved. Although judgments are subtle, there are speakers who accept the contrast exemplified in (26):

(26) a. *J’aurais aimé qu’en soient publiés \([NP \ e]\)
b. ?J’aurais aimé qu’en soient publiées \([NP \ trois \ e]\)

Let us suppose that the features of pro can be partially recovered by coindexing with a postverbal subject which is partially overt, a characterization which, I think, is intuitively clear, although it remains an interesting question how to make it more precise.

1.5

If this general approach is on the right track, it suggests that we rethink the distinction between the null expletive of inversion and a null argument. Specifically, if both null expletives and null arguments are subject to the same licensing conditions, that is to say, if they are treated by the pro module as elements of the same type, as the Hebrew and French facts seem to suggest, then it is surely not the D-Structure or S-Structure characterization of the subject position as thematic or non-thematic that is relevant for the assignment of features. The distinction usually made between the two types of null subjects is that in an inversion construction, the postverbal element bears the θ-role while the null subject is devoid of any thematic content. In classical GB theory (Chomsky 1981, Burzio 1986) the preverbal expletive was needed to transmit Case to a postverbal NP. But if recent work by Belletti (1986), Pollock (1983), Safir (1985), to cite only a sample, is correct in assuming that Case can, and perhaps must, be assigned directly to a postverbal NP, then it remains a mystery why a preverbal expletive is necessary altogether. The mystery is compounded if one adopts Chomsky’s (1986a) proposal about expletive replacement. If an expletive is not needed for Case or thematic reasons and, moreover, it is eliminated in LF, why should it be there in the first place?

In fact, there have been a number of linguists, e.g., Adams (1987), Borer (1986), Travis (1984) who have advanced the position
that in inversion constructions, there is no subject position other than the one occupied by the postverbal subject itself. The Hebrew and French data I have discussed, militate, I think, against such a view since it is not clear how the nonextractability of postverbal subjects can be accounted for in theories of this kind without burdening them with further assumptions.

Indirectly, then, the facts discussed above support a strong version of Chomsky’s Extended Projection Principle or the requirement that clauses have subjects in canonical positions.

Let us assume, then, that the presence of a subject position is given by the Extended Projection Principle and does not derive from Case theoretic requirements. Let us further maintain the assumption that when the subject position in non-thematic, i.e., in passive, raising and unaccusative constructions, it is filled by a dummy, a placeholder expletive at S-Structure.

But the facts discussed above point to a different conclusion, namely, that there must be a level at which the distinction between an expletive and an argument is obliterated. Clearly, this level cannot be S-Structure, since expletives are positively distinguished from arguments at that level. Suppose that it is LF and suppose, further, that the “obliteration” of the expletive/argument distinctions is implemented by replacing the expletive by its coindexed argument. There is, thus, no difference in LF between (27a) and (27b); both are uniformly (27b):

\[(27) \quad \begin{align*}
\text{a.} & \quad \text{pro}_i \text{ arriva un uomo}_i \\
\text{b.} & \quad \text{un uomo}_i \text{ arriva } t_i
\end{align*}\]

The pro module, it appears, must be sensitive to the LF properties of the subject position. One is, thus, led to the conclusion that the pro module identifies pro w.r.t LF by assigning overt features to a null subject which is to be interpreted as argumental.⁵

1.6

To conclude this section, let us summarize its main points. I have shown that the conditions which a null subject of inversion must

⁵ An alternative approach would be to treat both cases of pro as uniformly expletive at S-Structure. We would then assume that in argumental pro-drop cases, it is AGR itself, and not pro which is assigned the external θ-role. Expletive pro is
meet in order to be licensed are really the same as those that must be met by a null argument. I have argued that a necessary condition for feature assignment to both occurrences of null subjects is that the features are copied off or recovered from a phonologically overt element. The analysis thus demonstrates that rich agreement must, minimally, be taken to mean the overt representation of features. The parallelism between inversion and argument pro-drop is obscured in Italian due to the language's rich agreement, which can always assume the role of the feature.

In Hebrew, however, the role of the postverbal NP in licensing the null subject is revealed precisely by the variability in the capacity of AGR to support a null subject. I concluded by suggesting that the identity between the null subject of inversion and argument pro is perhaps less puzzling than it first sounds, when embedded in a theory of expletive replacement.

2.1

In the previous section, I discussed the conditions under which a null expletive of inversion is licensed. I claimed that null expletives of inversion need to be identified by overt features of person and number at S-Structure. Consider, now, the case of expletives associated with S' extraposition and raising construction, as illustrated in (28):

(28)  a.  *ni'dmc  li  Se-Venezia Soka'at.
      pro seem+3ms to-me that-Venice sinking+sf
     "it seems to me that Venice is sinking"

   b.  barur  Se-Reagan ken yada 'al ha'avarat Contras
      pro clear+3ms that-Reagan yes knew about transfers
         ha-ksafim la.
     the funds to-the-Contras
     "it is clear that Reagan did know about the transfer of funds to the Contras"

   c.  racuy  Se-tag'i'a mukdam.
      pro preferable+ms that-arrive+2ms early
     "it is preferable that you arrive early"

then replaced by AGR in LF. This raises the question of the status of the Structure Preserving Constraint (SPC) of Emonds (1976), Chomsky (1986), in LF. One possibility is that the SPC holds of move alpha which occurs prior to S-Structure and that it is relaxed in LF, permitting an X' to move into a specifier position.
These cases, which have also been discussed previously in the literature, are problematic at first glance. A postverbal subject, a clause in these examples, bears no features of person and number and yet a null subject pro is acceptable. Note that we cannot test for extractability in this case, because there is no wb-form for clauses. But that doesn’t affect the main point which is that these sentences contradict, prima facie, the claim that null subjects must be identified by overt grammatical features such as person and number.

One possible way out of this dilemma, but one which I will not pursue, is afforded if we assume that the pro of raising/extrapolation is a “true” expletive, as opposed to the null subject of inversion which, as we have seen, is not. Following Rizzi’s reasoning, then, a “true” expletive needs only to be formally licensed and is not required to meet the feature assignment condition in (17). Rizzi’s analysis, which rests on a classification carried out in Travis (1984), yields a tripartite distinction between referential null arguments, quasi-argumental null subjects and non-argumental, i.e. expletive null subjects. Whatever else might be true, I think that the Hebrew facts show that it is inaccurate to lump together null subjects of inversion and null subjects of extrapolation. But this would lead to a four-way distinction. Surely a generalization is being missed here, since the expletives of inversion are licensed under the same conditions as null arguments.

The alternative I will pursue makes only a two-way distinction, on the one hand, between pro which is replaced in LF by an argument which requires a specification of person, typically, a referential NP and, on the other hand, pro replaced by an argument which is impersonal, typically an S’ or a non-referential NP argument. In effect, then, I propose to redistribute null expletives: Those of subject inversion will be treated like referential pro, while those of raising/extrapolation will be assimilated into the class of non-referential pro’s which will also include the null subjects of weather and temporal predicates, pro_{wb} and impersonal passives. I will suggest that the line of demarcation ought to be drawn between impersonal subjects, on the one hand and subjects which have a specification of person, on the other.

As a point of departure, recall that I have, until now, been assuming that Hebrew differs from Italian in the degree to which AGR is endowed with overt f-features. Consider, now, the inflectional paradigm of Hebrew, given in table (29). I have starred the persons and tenses where argumental pro-drop is unacceptable and have suppressed the phonological alternations induced by affixation:
(29) Inflectional paradigm with root “Smr” = “guard”

<table>
<thead>
<tr>
<th></th>
<th>PAST</th>
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<th>FUTURE</th>
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<td>singular</td>
<td>plural</td>
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<td>Samar-ti</td>
<td>Samar-n-u</td>
<td>?e-Smor</td>
<td>ni-Smor</td>
</tr>
<tr>
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<td>Samar-ta</td>
<td>Samar-t-em</td>
<td>ti-Smor</td>
<td>ti-Smor-u</td>
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<tr>
<td>2f</td>
<td>Samar-t</td>
<td>ti-Smor-i</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3m</td>
<td>*Samar-0</td>
<td>*Samar-0-u</td>
<td>*y-i-Smor</td>
<td>*yiSmor-u</td>
</tr>
<tr>
<td>3f</td>
<td>*Samar-0-a</td>
<td></td>
<td>*t-i-Smor</td>
<td></td>
</tr>
</tbody>
</table>

PRESENT (participle)

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*Somer</td>
<td>*Somer-im</td>
</tr>
</tbody>
</table>

Putting aside the participial present tense, let us note that an argument on the basis of morphological overtness is hard to sustain, as a glance at future tense person morphology will tell. In the future tense, number, gender and person are all represented by discrete morphemes. Given all that has been said thus far, it is not clear why pro-drop should not be available in the future third person.

Now, it is possible that the restriction on third person pro-drop in the future is modelled on analogy with the past tense, where the morphology is overtly different in the first and second persons. But this begs the question of why the grammar is not set the other way around, with the future tense serving as the basis for analogy. Moreover, even in the past, where arguably the third person is not represented overtly, it is still clearly discrete since it is the only person which is non-overt.

In fact, let us strengthen these observations to the claim in (30):

(30) Hebrew past and future tense AGR is as rich in its f-features as is AGR in Italian.

This claim rests on the assumption that the absence of an overt feature, such as a third person affix in the past tense, can itself be taken to be a distinctive feature. This seems quite reasonable, especially since only one of the three persons, in the past tense, is unmarked and the language learner can unambiguously identify it. But if this is right then we must once again revise the feature assignment procedure which was tentatively given in (17). What needs to be said, I think, is that pro must be associated with discrete, rather than overt features. In order for a non-overt feature to be discrete, there must be at most one non-overt feature in a given paradigm; all the rest must be overt:
But now we are faced with the task of explaining the restrictions on Hebrew pro-drop. Following Benveniste (1966), my approach will be to capitalize on an obvious difference between first and second persons, on the one hand, and third person, on the other. That first and second person differ, in some fundamental way, from the third person is a well-noted fact. Thus, first and second persons are always presupposed in a discourse, while third person is not. Moreover, first and second persons are intrinsically argumental whereas third person may be an argument or a non-argument. There couldn't be first and second person expletives.\footnote{The 'third person' is not a 'person'; it is really the verbal form whose function it is to express the non-person" (Benveniste 1966, 198).}

Let us suppose, then, that first and second person are inherently persons, while third person is, in principle, ambiguous between a personal reading and an impersonal one.

Let us further suppose that the theory of markedness regards as unmarked only the inherent persons, first and second. Third person, in the unmarked case, is treated as impersonal. Thus by the theory of markedness, the Hebrew paradigm constitutes the unmarked case. For a speaker to learn that Italian third person can be a person as well as impersonal, positive evidence must be accumulated.

Imagine that in order for third person to be regarded as a person, it is assigned the feature \([+p]\). If it is \([-p]\) it is interpreted as impersonal. Thus the marked nature of Italian agreement can be captured by the following rule:

\begin{equation}
\text{(32) Assign } [+p] \text{ to the third person marker}
\end{equation}

The grammar of Hebrew, being unmarked for this feature, contains no such rule. The feature \([p]\), I assume, is assigned along with the person features, in accordance with the assignment recoverability procedure (31).

A pro which is assigned features by a third person which is \([+p]\) can be replaced by an argument bearing a personal third person in LF. When the specification for \([p]\) is negative, only an impersonal argument can appear in the position occupied by pro. In Hebrew, where the third person is \([+p]\) only in the first and second person AGR, and \([-p]\) in third person AGR, since rule (32) does not apply, an argument bearing a person feature can only appear either
with first or second person agreement, or, alternatively, when the feature [+p] can be assigned to pro by an overt, or, what amounts to the same thing in this instance, a phonologically discrete third person NP. Thus, we can maintain our prior generalization that the pro of inversion must be associated with an overt element at S-Structure. The only modification that needs to be introduced is that the overt element is needed not in order to assign a person feature which a putatively impoverished AGR cannot, but rather to supply pro with the feature [+p], which AGR, although perfectly rich, is not marked for.

This analysis predicts that null subjects which are replaced by impersonal subjects may appear with third person inflection. In addition to the raising/extraposition examples in (28), we can see that this prediction is borne out w.r.t. impersonal passives in (33), temporal predicates, (34), and constructions with proarb as in (35):

(33) a. nixtav 'al-av ba-iton.
    write-passive about-him in+the-paper
    “it was written about him in the paper”

b. huxlat 'al haxzarat ha-plitim.
    decide-past-passive on return the-refugees
    “it was decided on the return of the refugees”

(34) a. kar.
    cold
    “it is cold”

b. meSa’amem.
    boring
    “it is boring”

(35) a. be-Tel Aviv Sotim capuccino ’im kacefet.
    in-Tel Aviv drink+1pl capuccino with whipped cream
    “in Tel Aviv (they) drink capuccino with whipped cream”

b. hifsiku li-mkor sigariot ba-kiosk.
    stop-1pl-past to-sell cigarettes in-the-kiosk
    “(they) stopped selling cigarettes at the kiosk”

The sentences in (33)-(35) all illustrate impersonal subjects which, as we can plainly see, are permitted with third person inflection.

The proposal that the person marker needs to be specified for whether is it to be interpreted as a person marker or as impersonal has the consequence of enriching the pro module by the addition of another parameter. The proposal bears similarity to Borer’s (1983)
proposal that the third person AGR in Hebrew is marked [−referential]. I have chosen not to use this feature since it is not clear to me what implicit commitment it entails for, e.g., the referential status of clauses. The intuition behind both ideas, I think, is the same, namely, that morphological explicitness and formal licensing are not sufficient to license a null subject. I am also taking a neutral position w.r.t. to Borer’s recent proposal that third person AGR in Hebrew is anaphoric.

Let me summarize the discussion. I have argued that by the admission of a third factor into the licensing theory for pro, the feature [p], we can achieve a more precise characterization of different grammatical systems. Specifically, I argued that Hebrew is like Italian in having both a formally licensed pro and a rich agreement system. It differs, from it, however, in having impersonal, that is, [−p] third person agreement. In English, pro is simply not formally licensed. As for French, let me tentatively suggest that French, like Hebrew, has an impersonal third person, but it differs from Italian and Hebrew in lacking a fully discrete system of person features. This would account for the fact that Hebrew, but not French, allows non-referential null subjects such as quasi arguments. The nonextractability of postverbal subjects in Hebrew is due, I claimed, to the incapacity of AGR to mark pro as [+p], even though it is perfectly able to mark it for f-features.

The system I have outlined in this paper assimilates the null subject of extraposition to the null subject of quasi arguments. In Hebrew, both appear in the same environment, but in Italian, as Rizzi has shown, they do not. This is just one indication that the system I have tried to develop in this paper is incomplete and, at best, only an approximation. Further refinements and articulations are certainly going to be necessary before we have a clearer picture of the structure and function of the pro module.

References

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