HEBREW AS A PARTIAL NULL-SUBJECT LANGUAGE*

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Abstract. To account for the tense-wise and person-wise uneven distribution of null subjects in Hebrew, we argue first that Hebrew finite T can have either a full phi set – with person and number, a partial one – with number only or no phi set at all. Second, Hebrew pro is argued to lack a person feature. Feature matching with T consequently fails when T has [person], but succeeds when T lacks [person], albeit with the subject interpreted impersonally. Third, 'control' of pro involves the assignment of a person feature to pro, rendering it capable of reference. Fourth, the fact that Hebrew pro can only be first or second person is an illusion: The speech act participants are associated with a functional head SAP, to which the first and second person pronouns cliticize. Thus, there is no independently-referring pro at all in Hebrew.

1. Introduction

Hebrew is a partial null subject language, manifesting three intertwined asymmetries in the distribution of covert subject pronouns.

The referentiality asymmetry:
Non-referential argumental null subjects are possible in every tensed environment but one.

The person asymmetry:
Referential null subjects are permitted with first and second person inflection; third person covert subjects are only possible in contexts of (non-standard) binding and/or Control.

The tense asymmetry:
Referential null subjects are only possible in past and future tense clauses. They are ruled-out in present tense clauses.


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1.1. The referentiality asymmetry

The sentences in (1) illustrate three types of non-referential null subjects, atmospheric, arbitrary quasi-existential and arbitrary generic/quasi-universal. These sentences are grammatical independently of whether they are affirmative or negative. The negating particle is \(lo\).

(1) a. (lo) qar.
   neg cold
   'It is (not) cold.'

b. (lo) dofqim b-a delet.
   (neg) knock + pres-mpl on-the door
   'Someone is (not) knocking on the door'
   lit.: 'Somebody (/Nobody) is knocking on the door.'

c. (lo) ma'arixim et ha truma šel-a.
   neg appreciate + pres-mpl acc the contribution of-3fs
   'People (don't) appreciate her contribution.'

In present tense negative sentences, such as those in (1), there is an alternative to \(lo\), namely, \(eyn\). (\(Eyn\) cannot occur with past or future tense verbs.) This negative particle can bear a suffix, e.g., \(o\) '3ms', as in (2a), in which case it resembles an inflected (negative) auxiliary. \(Eyn\) can also occur in a bare, non-agreeing form, with the clausal subject on its right. This option is illustrated in (2b) and, apart from a brief mention at the end of section 4.1, will not be further discussed in this paper, (but see Shlonsky 1997, 2000.)

(2) a. hu eyn-o dofeq
   he neg-3ms knock + pres-ms on-the door
   'He is not knocking on the door.'

b. eyn hu dofeq b-a delet.
   neg he knock + pres-mfr on-the door
   'He is not knocking on the door.'

The sentences in (3) are ungrammatical. Their ungrammaticality stands in sharp contrast to the full grammaticality of the \(lo\)-negated variants of the sentences in (1) and leads to the descriptive generalization stated in (4).

(3) a. *eyn-o qar.
   neg-3ms cold
   'It is not cold'

b. *eyn-am dofqim ba-delet.
   neg-3pl knock + pres-mpl on-the door
   'Someone is not knocking on the door'

c. *eyn-am ma'arixim et ha truma šel-a.
   neg-3pl appreciate + pres-mpl acc the contribution of-3fs
   'People don't appreciate her contribution.'
(4) Non-referential null subjects are illicit as subjects of agreeing *eyn.

Section 3 is dedicated to an explanation of (4).

1.2. The person asymmetry

The distribution of referential null subjects is split along the lines of grammatical person: Third person null pronouns, as opposed to first and second ones, are illicit in the past and future tenses. This split is exemplified by the contrast between (5a) and (5b) for the past tense and between (6a) and (6b) for the future tense.¹

(5) a. *lamad
   study+past-3ms + *lamad-da + albanit.
   study+past-3fs + Albanian
   study+past-3pl +
   'He/she/they studied Albanian.'

b. lamad-ti
   study+past-1s + lamad-ta +
   study+past-2ms +
   lamad-t + albanit.
   study+past-2fs + Albanian
   lamad-nu +
   study+past-1pl +
   lamad-tem +
   study+past-2pl +
   'I/you-m/you-f/we/you-pl studied Albanian.'

¹ The glosses provided for the agreement affixes here and elsewhere in this paper are only intuitive and do not do justice to their true morphological makeup. For an influential Distributed Morphology account of Hebrew verbal inflection, see Halle (2000).
4 Ur Shlonsky

(6) a. *yi-lmad
   3ms-study+fut
   *ti-lmad          albanit.
   3fs-study+fut    Albanian
   *yi-lmed-u
   3m-study+fut-pl  
   'He/she/they will study Albanian.'

   b. e-lmad
   1s-study+fut
   ti-lmad
   2ms-study+fut
   ti-lmed-i        albanit.
   2s-study+fut-f   Albanian
   ni-lmad
   1pl-study+fut
   ti-lmed-u
   2m-study+fut-pl  
   'I/you-m/you-f/we/you-pl will study Albanian.'

Section 4 discusses this asymmetry.

1.3. The tense asymmetry

Null referential pronouns are impossible in the present tense, as shown in (7):

(7) *lomed
    study+pres-ms
    *lomed-et
    study+pres-fs    albanit.
    *lomd-im        Albanian
    study+pres-mpl  }
    *lomd-ot
    study+pres-fpl  
    'I/you-m,f/he/she/we-mpl,fpl/you-mpl,fpl/they-mpl,fpl study/s Albanian.'
The sentences in (8) contrast with those in (7) and show that in eyn-negated environments, referential pro is acceptable, though solely when eyn is inflected for first or second person (compare (8a) and (8b).) Thus, the first/second vs. third person split, manifested in the past/future tense paradigm reappears in present tense sentences with inflected eyn.

(8) a. eyn-eni lomed
    neg-1s study+pres-ms
    eyn-xa lomed
    neg-2ms study+pres-ms
    eyn-ex lomed-et Albanian
    neg-3fs study+pres-fs
    eyn-enu lomd-im
    neg-1pl study+pres-pl
    eyn-xem lomd-im
    neg-2pl study+pres-pl

    'I am /you-m are not studying Albanian'

b. *eyn-o lomed
    neg-3ms study+pres-ms
    *eyn-a lomed-et
    neg-3fs study+pres-fs
    *eyn-am lomd-im
    neg-3pl study+pres-3pl

    'He/she/they is/are not studying Albanian'

The following figure summarizes the distribution of referential and non-referential null subjects in Hebrew.
The distribution of Hebrew Null subjects

Platzack 1987, Rizzi 1982, 1986, Roberge 1990, Roberts 1993, Taraldsen 1978, Vainikka & Levy 1999, a.o.) These proposals provided a formal characterization of the observed (though frequently partial) cross linguistic correlation between the degree to which person and number features are discretely represented in a verbal conjugation paradigm and the occurrence and distribution of covert pronominal subjects.²

The Minimalist Program introduced a conceptual innovation with regard to the syntactic role of verbal phi features and the process of agreement. Chomsky has frequently pointed out that while the [number] value of subject nominal phrases and the [person] value of pronouns are relevant for their interpretation, (compare: ‘We invaded Iraq’ with ‘They invaded Iraq’;) these features do not serve any interpretative role when occurring as components of verbal inflectional morphology, i.e., as components of T. From the perspective of semantic interpretation, agreement in number and person of a subject and a verb is superfluous, since it does not contribute an interpretation which cannot be directly gleaned from the subject itself. Clearly, this kind of redundancy cannot be tolerated in an ‘optimally designed’ system.

These considerations lead Chomsky to the idea - which underpins much current research including the present paper - that agreement plays a front stage role in the syntactic computation which renders features

² The existence of such a correlation in inflecting languages is hardly in doubt. What is more problematic is its non-uniformity. See e.g., Müller (2006) for a recent discussion. A different approach altogether seems to be called for to handle null subjects in languages lacking verbal phi features, such as Chinese (see Huang 1984). Jaeggli & Safir (1989b) formulate a parameter intended to handle both agreement and agreement-less pro drop systems, as does Speas (2006). See also Holmberg (2005).
visible to the external interpretive modules and drives displacement. Without going into the details, which I assume the reader to be familiar with, take agreement in phi-features to be established through the process of Agree, in which the phi features on the subject are probed by T and come to license, or value the inherently uninterpretable phi features of T. T then contains no unvalued features and meets the condition of Full Interpretation. Agreement in phi features is, additionally, a necessary condition for the valuation of the Case feature on the subject nominal.

The implication of taking the phi-features on T to be uninterpretable is, as Holmberg (2005) cogently points out, that these features cannot in turn be used to license or identify the features of a null subject (e.g., in the sense of Rizzi 1986.) Indeed, the minimalist perspective on T's phi features has the consequence of reversing the licensing relationship: One should now ask how the features of T are valued by a null subject and not how T licenses or assigns values to the features of the (null) subject.

With this reasoning in the background and, assuming for concreteness the implementation of Agree as valuation, (Chomsky 2001, 2004), let us consider a formal implementation of the distribution of Hebrew null subjects, starting with those that occur in sentences with eyn.

3. Non-referential subjects

As a first step, assume that the T head associated with eyn, or T_{eyn}, carries a complete but unvalued set of phi features, signaled by the agreement suffixes on eyn. The phi set of T_{eyn} is schematized in (9).^{3} T_{eyn} probes for a goal bearing a set of interpretable phi-features and valuation is implemented by assigning a value, or filling-in the person and number slots in T's phi-set matrix.^{4}

(9) Phi-set matrix of T_{eyn}

\[
\begin{bmatrix}
\text{P(person)} & \text{N(number)}
\end{bmatrix}
\]

Non-referential pronouns are impersonal by definition. This means that such pronouns lack a specification for [person], although they possess a lexical number feature - plural for arbitrary pro and singular for other

^{3} Although I use the terms 'phi set' and 'phi matrix', I am not committed to the view that phi features constitute a 'bundle' in Chomsky's (2001, 2004) sense. For the purposes of this paper, phi features should probably be considered as unbundled.

^{4} It is plausible that T is also endowed with a gender feature, which marks second and third person inflection in Hebrew. Since gender does not play a role in the present discussion, I ignore it.
occurrences. Consequently, probing by $T_{eyn}$ for a value for [person] doesn't turn up anything. The sentences in (3) fail Full Interpretation, since they contain an unvalued feature on $T_{eyn}$.

The failure to value [person] on $T_{eyn}$ in (3) should not be attributed to the phonetically-null status of the non-referential subject but rather, to its non-referential status. Hebrew has an impersonal 'it'-like pronoun, ze, the subject in (10a) (see Hazout 1994 and Sichel 2001.) Despite being overt, this pronoun is incompatible with eyn, as (10b) shows, since it lacks a [person] specification.

(10) a. ze (lo) kaše le-daber rusit.
   'It (neg) difficult to-speak Russian'
   'It isn't difficult to speak Russian.'

b. *ze eyn-o kaše le-daber rusit.
   'It neg-3ms difficult to-speak Russian'
   'It isn't difficult to speak Russian.'

Covert non-referential subjects are fine with present tense verbs without eyn, as in (1). They are also perfect with past and future tense verbs, as shown in (11).

(11) a. (lo) haya qar
   (neg) be+past cold
   'It was (not) cold'

b. (lo) dafqu b-a delet
   (neg) knock + past-mpl on-the door
   'Someone did (not) knock on the door'

c. (lo) he'eri'xu et ha'' truma šel-a
   (neg) appreciate + past-mpl acc the contribution of-3f,
   'People (didn't) appreciate her contribution'

If past/future T in Hebrew had the same phi-feature matrix as $T_{eyn}$ (see (9)), then sentences containing a pronominal subject bereft of a person feature, namely, a non-referential one, would fail Full Interpretation since such sentences would not contain a legitimate goal for Agree in person by T.

To resolve this difficulty, let us assume that the T of past and future tense verbs - present tense verbs are discussed separately in section 5 - contains a reduced phi set matrix, lacking the slot for [person].

(12) Phi-set matrix of $T_{p&f}$

\[
\{[N_{\text{number}} \_\_\_\_\_]\}
\]

Characterized in this fashion, past/future T is compatible with both referential and non-referential subjects since it does not probe for [person].
This conclusion raises the immediate question of how to account for the person split with past/future T and, from a morphosyntactic angle, how to characterize the content of the verbal affixes which code for person features. I approach this problem from the perspective of eyn and then extend the discussion to the past and future tense forms.

4. Referential subjects – Person

Null subjects of agreeing eyn sentences can only have first and second person reference, as illustrated by the contrast between the sentences in (8a) and (8b).

This pattern reproduces the person split which characterizes null subjects with past and future tense verbs in (5) and (6). Continuing to assume that T_{eyn}'s phi-feature matrix is as in (9), that is, that it manifests a complete but unvalued set of phi features, the observation seems to be that among null pronouns, only first and second person ones are legitimate goals for phi-probing by T.

I suggest an interpretation of this observation in terms of Kayne's (2000: §9.11) idea that covert pronouns can only be third person and its corollary, that “an agreement suffix having the properties of a pronoun can only be first or second person.” (Kayne 2000: 176.)

4.1. First and second person

Concretely, I take the first and second person inflectional endings (suffixes with eyn and past tense verbs, a combination of prefixes and suffixes with future tense verbs; see (5) and (6)), to be the morphological correlates of a syntactic head which projects a Speech Act Participant Phrase, or SapP, to employ Bianchi’s (2006) terminology.

As Bianchi notes, first and second person pronouns are discourse-dependent, in that “their reference is determined by the changing discourse roles […] Third person pronouns, instead, are not discourse-dependent in this sense.” (p. 2034) This echoes the familiar idea that only the participants in the speech act – the speaker and the addressee, represented by first and second person – have true grammatical person (cf. Benveniste 1956).

I suggest a structural interpretation of this idea: Sentences containing first or second person subjects contain the category SapP. 5

SapP can be thought of as a particular species of Rizzi’s (2005, 2006) SubjectP, that is, a criterial position encoding discourse-relevant inform-
ulation, in this case, discourse roles, (see Cardinaletti 2004 and Rizzi & Shlonsky 2007.) Concretely, take SapP to be projected above \( C \) and above \( TP \), as in (13).

\[
(13) \quad [CP \ldots C \ldots [\text{SapP} \ldots \text{Sap} \ldots [TP \ldots T \ldots]]]
\]

\( \text{Sap}^0 \) is filled by a pronominal clitic, moved from the position of the thematic subject. Cliticization is implemented by moving the pronominal subject to \( \text{Sap}^0 \), along the lines suggested by Belletti (1999) for object clitics in Romance, and by subsequently moving the verbal complex in \( TP_{PF} \) or \( T_{syn} \) and adjoining it to the clitic head, (see e.g., Shlonsky 2004). \( \text{Sap}^0 \) can be construed as containing an OCC (head) feature, which attracts \( TP_{PF} \) and \( T_{syn} \). Schematically, the DP containing the clitic is first moved to \( \text{Spec}/T \), then the clitic head is extracted and adjoined to \( \text{Sap}^0 \). Finally, \( T^0 \) is adjoined to \( \text{Sap}^0 \) (see a related discussion in Cardinaletti & Repetti 2007).

The clitic in \( \text{Sap}^0 \) can be doubled by an overt subject pronoun, in which case both the clitic and its double have their source in a complex DP (as in Belletti 2005, Uriagereka 1995), but given the fact that the subject pronoun can be separated from the verbal complex by an adverb or a parenthetical expression, as shown in (14), it is likely that the landing site of the overt pronominal subject is actually higher than \( \text{Spec}/\text{Sap}^0 \). This is not surprising, since there are likely to be several different positions for preverbal subjects in the clause, (Cardinaletti 2004 and Shlonsky 2000).

\[
(14) \quad \begin{align*}
\text{a.} & \quad \text{ani behexlet lamad-ti albanit} \\
& \quad \text{I certainly study + past-1s Albanian} \\
& \quad \text{I certainly studied Albanian}
\end{align*}
\]

\[
\begin{align*}
\text{b.} & \quad \text{ata be'emet lamad-ta albanit} \\
& \quad \text{you really study + past-2ms Albanian} \\
& \quad \text{You really studied Albanian}
\end{align*}
\]

To summarize, Hebrew lacks \textit{covert} first and second person pronouns.\(^6\) Rather, it possesses \textit{overt} subject clitics, which may be doubled by full pronouns. When the clitic is not doubled, there is an illusion that there is a covert pronoun associated with first or second person inflection but in fact this inflection is an incorporated \( \text{Sap} \) head.\(^7\)

Typologically unrelated languages provide evidence for a distinct syntactic position for the \( \text{Sap} \) persons. Poletto (2000), for example, discusses manifestations of the structural distinction between the \( \text{Sap} \) persons and third person in many Veneto dialects with respect to the

\(^6\) More precisely, it lacks covert first and second pro subjects since, as Landau points out, (personal communication), controlled first and second person PRO is possible in Hebrew, as in English, a non-null subject language.

\(^7\) Hebrew is different from Finnish, where, according to Holmberg (2005), 1 & 2 person null subject sentences have a filled Spec/IP, satisfying the EPP.
positioning of subject clitics, as do Manzini & Savoia (2005) who consider an even larger spectrum of North Italian dialects. Rice's (2000) discussion of Athapaskan agreement prefixes goes in the same direction (see also Linn and Rosen 2003 and references cited therein.).

The distribution of pronominal subjects in Hebrew *eyn* sentences provides language-internal evidence for a configurational person split. Shlonsky (2000) discusses the pattern illustrated in (15a,b), which points to the cartographic generalization in (16).8

(15) a. ??ani rodef
++ I seek-ms
++ ??ata rodef
++ you-m seek-ms
++ ??at rodefet
++ you-f seek-fs
++ hu rodef
++ eyn he seek-ms šalom
++ neg hi rodefet peace
++ she seek-fs
++ ??anaxnu rodfim
++ we seek-pl
++ ??atem rodfim
++ you-pl seek-pl
++ hem rodfim
++ they seek-pl

*I/y*ou-m/you-f/he/she/we/you-pl/they do not seek peace
*I/y*ou-m/you-f/he/she/we/you-pl/they am/are/is not a peace seeker/peace seekers.*

8 Note the remarkable similarity between (15a,b) and the position of subject clitics relative to negation in the Veneto dialect of Pollesano in (i) and (ii) (from Poletto 2000).

(i) A no vegno
scl-1s neg come.
*I am not coming.*
(ii) No la vien
neg scl-3fs comes.
*She is not coming.*

occupied by first and second person pronouns can occur both

'I/you-m/you-f/he/she/we/you-pl/they do not seek peace'
'I/you-m/you-f/he/she/we/you-pl/they am/are/is not a peace seeker/peace seekers.'

4.2. Third person

Turning to covert third person pronouns, we must now explain why these are incompatible with both $T_{\text{eyn}}$ and $T_{\text{P}&F}$. Since only the first of these two $T$'s has an unvalued person feature, (compare (9) and (12)), we cannot attribute this asymmetry to some malfunction in the Agree or feature valuation mechanism. We should seek an explanation in the properties of the covert third person pronoun itself.

Third person covert pronouns are indeed unacceptable in examples like (5a) and (6a). However, they are fine in contexts where an overt
Hebrew as a partial null-subject language

Landau diagnoses the null subject in examples like (17) as PRO, not pro, pointing out some interpretive similarities between the null subject of such finite clauses and the subject of non-finite control complements. His analysis is embedded in a theory of Control which is geared to explain, inter alia, the alternation of PRO, overt pronouns and lexical subjects in environments of Control into finite clauses. A detailed evaluation of Landau’s calculus of Control lies beyond the purview of the present investigation but clearly, if his analysis is valid, then the pattern in (17) is irrelevant to this study.

It is, nonetheless, tempting to relate (17a) to other cases of referentially-dependent third person covert subjects, in particular in

Landau (2004) studies one such species, restricted to future tense complements of matrix predicates which select subjunctive complements in other languages. Landau argues that future tense morphology can designate subjunctive mood in Hebrew and demonstrates that clauses of this sort manifest the cluster of properties typically associated with subjunctive mood. The crucial fact about null subjects in such environments is that they cannot have independent reference but must be controlled.

Thus, (17a) (Landau’s (3b)) shows that the covert subject of ‘go’ in the embedded clause must be controlled by the matrix subject, (in contrast to the overt pronoun.) (17b) demonstrates that the embedded verb cannot be inflected for past tense when the subject is covert and (17c) shows that a factive matrix verb – which does not select for subjunctive – is incompatible with a null subject in the embedded clause.

(17) a. hem₁ kivu še hem₁2/pro₁2 yelxu₁₂ fut-pl home

They hoped-3pl that they/pro 3-go+fut-pl home

‘They hoped that they will go home early.’

b. hem kivu še hem/pro haľxu habayta

They hoped-3pl that they/pro went-3pl home

‘They hoped that they went home early.’

c. hem micta’arim še hem/pro yelxu habayta

They regret-3pl that they/pro 3-go+fut-pl home

‘They regret that they went home early.’

If the antecedent for the null subject is accessible. Several species of what we might call referentially-dependent pro can be discerned in Hebrew. (These were first discussed in Borer 1989).

Landau (2004) studies one such species, restricted to future tense complements of matrix predicates which select subjunctive complements in other languages. Landau argues that future tense morphology can designate subjunctive mood in Hebrew and demonstrates that clauses of this sort manifest the cluster of properties typically associated with subjunctive mood. The crucial fact about null subjects in such environments is that they cannot have independent reference but must be controlled.
contexts of control or binding into adjuncts which are problematic for his system.

Gutman (1999, 2004) discusses numerous cases which do not fall under Landau's generalizations. In (18), (Gutman 2004's (14a),) for example, a covert subject, obligatorily dependent on a nominal in the matrix clause (the subject, in this case), is grammatical in a past tense adjunct clause.

(18) Dani kibel mi-Dafna ve-Rina matana yafa
Dari received-3ms From-Dafna and-Rina present pretty-fs
axarei se pro₁/p₂ siyem et ha doktorat.
after that finished-3ms acc the doctorate
'Dani received a fine present from Dafna and Rina after he had finished his doctorate.'

Such null subjects can also be referentially-dependent on a matrix (indirect) object, as in (19) (Gutman's 2004 (14b).)

(19) Dafna ve-Rina natn-u le-Dani matana yafa axarei
Dafna and-Rina gave-3pl to-Dani present pretty-fs after
sše pro₁/p₂ siyem et ha doktorat.
that finished-3ms acc the doctorate
'Dafna and Rina gave Dani a fine present after he had finished his doctorate.'

It might appear that these temporal adjunct clauses are also in the subjunctive mood, as they would be, for example, in Romance. Null subjects are also possible in purpose adjuncts, which also manifest subjunctive in Romance.

(20) Dafna ve-Rina nišq-u et Dani kedey še
Dafna and-Rina kissed-3pf acc Dani in order that
pro₁/p₂ y-saye 3ms-finish-fut acc the doctorate
'Dafna and Rina kissed Dani so that he finish his doctorate.'

Consider, now, the contrast between a non-finite adjunct clause in (21a) and a finite one, in (21b). Covert subjects appear in both structures but their interpretation is different. In the non-finite adjunct, the subject is controlled by the matrix subject: (21a) cannot mean that Dani will win the prize. In (21b), on the other hand, there is a clear preference for object "control" and it is quite awkward to construe the sentence as meaning that Dafna will win the prize.
Hebrew as a partial null-subject language 15

(21) a. Dafna1 nišq-a et Dani kedey PRO₁/*₂ li-zkot be-pras
Dafna kissed-3fs acc Dani in order to-win in-prize
‘Dafna kissed Dani in order to win a prize.’

b. Dafna1 nišq-a et Dani kedey še pro₁/*₂ še
Dafna kissed-3fs acc Dani in order that
’ti-zke y-zke be-pras
3fs-win + fut 3ms-win + fut in-prize
‘Dafna kissed Dani so that she/he win a prize.’

(21a) instantiates run of the mill subject Control and the null subject in
the embedded clauses is PRO. Object Control is blocked in this example,
presumably because the direct object does not c-command the adjunct
clause (but see note 10.).

Now consider (21b) and the flip from subject to object control. It is not
obvious why a finite tense as opposed to a non-finite one should engender
an optional flip from subject to object control. One possibility, of
course, is that the null subject of finite clauses has the option of being
realized as pro, not PRO.

We thus have at least a plausibility argument for surmising that,
Independently of the question of grammatical mood of the adjunct
clause, (21b) does not involve Control into a finite clause of the Landau
type.

As for the relevance of mood, (22) shows that the mood specifica-
tion of the adjunct clause is orthogonal to the manifestation of
referentially-dependent covert subjects of the Gutman variety. In
Romance, reason/cause adjuncts appear in the indicative and not in
the subjunctive mood.

(22) Dafna nišq-a et Dani biglal še pro₁/*₂ siyem
Dafna kissed-3fs acc Dani because that finished-3ms
et ha doktorat.
acc the doctorate
‘Dafna kissed Dani because he had finished his doctorate.’

The referential dependency of the covert third person pronoun poses two
distinct questions, namely, how the pronoun gets its interpretation and
why it must be referentially-dependent.

Consider first the how question. Gutman’s examples demonstrate that
c-command is not a necessary condition for licensing referentially-
dependent null subjects so that the covert subjects under discussion are not *bound* in any standard syntactic sense.\textsuperscript{9,10}

Following Ariel (1990, 2001), Gutman views the accessibility of the antecedent as a necessary condition for the grammaticality of sentences with covert subjects. One of the factors that determine accessibility is the discourse salience of the antecedent. Consider, in this context, the paradigm in (23).

(23) a. šam’anu še lifney švu’ayim Dani xakar et heard-1pl that before two-weeks Dani interrogated-3ms acc Dafna, ve-še axarey xames dakot pro\textsubscript{1} maca Dafna and-that after five minutes found-3ms ota ašema. her guilty-fs

'We heard that two weeks ago, Dani interrogated Dafna, and that after five minutes he found her guilty.'

\textsuperscript{9} Borer (1989) held that the binding of these covert pronouns was anaphoric and provided sentences purporting to show that they could not have split antecedents. Ariel (1990) and Gutman (2004) provide several counterexamples which call Borer’s claim into question. The following example is from Ariel (1990: chapter 6), example (iv) cited by Gutman.

Noga, bikra et Shimon al ma’amaro ha šovinisti Noga criticized-3fs acc Shimon on article-3ms, the chauvinist kša pro\textsubscript{X} li-yrušalayim. when to-Jerusalem

‘Noga criticized Shimon on his chauvinistic article when they drove to Jerusalem.’

\textsuperscript{10} It is actually not entirely clear that adjunct clauses are *not* c-commanded by VP-internal material, see e.g., Bianchi (1997) on the position of temporal adjuncts. In (my) Hebrew, the manifestation of robust Condition C effects suggest that a direct object c-commands into an adjunct clause (some speakers accepts (i), though).

(i) *Dani pagas ota\textsubscript{1}, lifney še Rina, nihya mefursemet. Dani met her before that Rina became famous-fs

(ii) *Rina! harga oto\textsubscript{1}, siglal še Dani; nihya mefursem. Rina met him because that he became famous-ms

(iii) eizesefer tiyakta axarey še qarata? Which book filed-2ms after that read-2ms

‘Rina killed him because Dani became famous’

On the other hand, adjunct clauses can harbor parasitic gaps, which are presumably not c-commanded by the genuine wh gap.

b. ḥam'anu še lifney švu'ayim Dafna
heard-1pl that before two-weeks Dafna
nexkera al-yedey Dani, ve-še axarey
interrogated + pass-3fs by Dani and-that after
xameš dakot pro1 nime'a asema.
five minutes found + passive-3fs guilty-fs
'We heard that two weeks ago, Dafna was interrogated by
Dani, and that after five minutes she was found guilty.'

In both (23a) and (23b), the covert subject is coreferential with the
matrix subject. The ungrammaticality of (23c) might be attributed to
the fact that in a passive construction, the demoted agent is not
sufficiently salient and cannot serve as an accessible antecedent for the
covert subject in the second conjunct. (Note, in passing, that the
antecedents in the acceptable sentences (23a,b) do not c-command the
null subject.)

Although it remains to be determined how antecedent accessibility is
grammatically encoded, we can make a more concrete proposal with
respect to the implementation of non standard binding/control, hence-
forth NSB/C. The idea is that NSB/C involves the assignment of a person
feature to the covert subject (cf. Rorer 1989.) A pronoun in possession of
a person feature can be interpreted as a referential pronoun (see
Longobardi 1994, a.o.). Once the phi set of the covert subject is modified
– in this case, by the addition of a feature – a parallel modification is
implemented on T's phi matrix. Feature synchronization is a natural
extension of the mechanism of agreement: Once the probe-goal relation
establishes an agreement link, any modification of one of the terms of the
agreement relation entails a parallel modification in the other terms. (The
relevance of this requirement will become apparent in section 5.) Thus,
NSB/C assigns a person feature to pro and this feature is then copied
onto T.

Let us now turn to the question of why covert third person pronouns
must be referentially-dependent. An overt third person pronoun can refer

NSB/C assigns a feature to pro, not a value for a feature. Feature synchronization, in
turn, involves copying the person feature to T.
freely (as well as be bound) whereas a covert pronoun is referentially-dependent. This difference between the two seems to preclude an analysis in which null third person pronouns are overt pronouns minus phonetic content. We can also reject the view that Hebrew simply lacks null third person pronouns. If that were the case, it would be puzzling why they suddenly come into being in the presence of an appropriate antecedent. (There is also a more general question regarding the fate of the subject theta role if there is no constituent to bear it.)

Suppose that all covert "third person" pronouns possess a number feature but lack any specification for [person]. Such pronouns are therefore different from overt pronouns, which are endowed with both a person and a number feature. Hebrew thus has a single lexical pro, one that lacks a person feature. There is no lexical difference between non-referential and referential covert subjects; both are 'reduced' pronouns.\textsuperscript{12}

Such covert pronouns can be successfully probed by $T_{\text{PRF}}$, since this $T$ head only has a number feature in its phi set. Since the pronoun lacks a specification for person it can only be interpreted impersonally, i.e., non-referentially. Lacking an intrinsic person feature, these instances of pro cannot, however, refer. They rely on NSB/C for the assignment of this feature, which renders them capable of reference.

To conclude this section, consider a case which brings out more clearly the inherently non-referential status of null third person pronouns. What I have in mind is pronoun obviation in subjunctive contexts.

In addition to the controlled subjunctives exemplified in (17), there is a small class of verbs in Hebrew which resemble Romance subjunctives in imposing non-coreference or obviation on the subject of their complement clauses. The examples in (24) are Landau’s (2004) (9a,b).

(24) a. Rina\textsubscript{1} ract\textsubscript{a} še hi\textsubscript{1/2} tizke ba-pras.
Rina wanted that she\textsubscript{3f} win\textsubscript{4} in-the-prize
‘Rina\textsubscript{1} wanted that she\textsubscript{1/2} would win the prize.’

b. Gil\textsubscript{1} carix še hū\textsubscript{1/2} yeda carfatit.
Gil needs that he\textsubscript{3m} know\textsubscript{4} French
‘Gil\textsubscript{1} needs him\textsubscript{1/2} to know French.’

Note, now, that the subjects of the embedded clauses in (24) cannot be covert, as shown by the ungrammaticality of (25a,b), (adapted from Landau’s (59a)).

(25) a. *Rina\textsubscript{1} ract\textsubscript{a} še pro tizke ba-pras.
Rina wanted that 3f-win\textsubscript{4} in-the-prize

b. *Gil\textsubscript{1} carix še pro yeda carfatit.
Gil needs that 3m-know\textsubscript{4} French

\textsuperscript{12} For a structural implementation of this idea, see Ritter (1995), my own (1997) adaptation of Ritter (1995) and, more recently, Dechaine & Witschko (2002) and Holmberg (2005).
Assume a fairly standard view of obviation, namely, that in 'true' subjunctive clauses, the binding domain relevant for the embedded subject is extended to the matrix clause (see Quer 2006 for a recent survey.) Consequently, coreference between the overt subject pronouns in the embedded clauses in (24a,b) and the respective matrix subjects is excluded by Condition B. The pronouns must be obviative in order not to violate the binding condition.

Now consider covert pronouns. If these are assigned features by the matrix subject via Control or non-standard binding, then they violate Condition B. If feature assignment is withheld, then they presumably lack the minimal content necessary for independent (obviative) reference. Hence, covert pronouns must be barred from the subject position of embedded subjunctives of this variety.\(^\text{13}\)

5. Referential subjects – Tense

Although compatible with null non-referential pronouns (see (1)), present tense sentences – with the exception of those negated by eyn - eschew all covert referential subjects. The etiology of partial pro-drop developed in this paper leads us to expect different reasons for the absence of first and second person and of third person null subjects.

I assume that the absence of first and second person clitic subjects with present tense verbs is due to the absence of an appropriate host for the clitic. Recall from section 4.1 that the cliticization process involves two stages. First, the clitic is adjoined to Sap\(^0\) and then, T\(^0\) is adjoined to Sap\(^6\). It is the movement of T to Sap that provides a host for the clitic. Suppose that Sap\(^6\)'s OCC head feature is restricted to T\(_{eyn}\) and T\(_{P&F}\). T\(_{Pres}\) is not attracted. Hence, it cannot host the clitic in Sap\(^0\).

Non-clitic (or full) first and second pronouns are attracted to Spec/Sap. Their full acceptability in present tense sentences shows that they are not obligatorily associated with a clitic: They appear with a clitic in the company of T\(_{P&F}\) but not in sentences with T\(_{Pres}\).

Let us now turn to the referentially-dependent pro discussed in section 4.2. This kind of pro is unacceptable in present tense sentences, compare e.g., (19) (repeated below) and (26).

\(^{13}\) The question remains, of course, how to express the differences between Romance-style subjunctives, as in (24) and Balkan-type subjunctives, as in (17). The former, but not the latter, give rise to obviation effects. In Landau's system, the difference boils down to the presence vs. the absence of Agr in C.
(19) Dafna ve-Rina natn-u le-Dani matana yafa axarei
Dafna and Rina gave-3pl to-Dani present pretty-fs after
še pro₁/*₂ siyem et ha doktorat.
that finished-3ms acc the doctorate
'Dafna and Rina gave Dani a fine present after he had finished his
doctorate.'

(26) *Dafna ve-Rina notnot le-Dani matana yafa kol
Dafna and Rina give-3pl to-Dani present pretty-fs every
pa'īm še pro mefarsem ma'amar xađas
time that publish-3m article new
'Dafna and Rina give Dani a fine present each time he publishes
a new article.'

A covert pronoun differs from an overt one in lacking [person], which it can
receive through NSB/C. The contrast between (19) and (26) shows that
NSB/C can apply into clauses with TP&F but not with TPres. In the following
paragraphs; I argue that it is not NSB/C itself which is blocked with TPres,
but that this operation entails a computational breakdown when the
features of modified pro and copied onto the phi set of the agreeing head.

I suggest that we attribute the relevant difference between TP&F and
TPres to properties of their phi sets and the means by which the agreement
mechanism functions in present tense clauses.

The crucial fact here is that present tense verbs in Hebrew are
participles, not only morphologically but syntactically as well (see
Shlonsky 1997, Siloni 1995.) In (27a), the participle appears in a
compound tense structure, under an auxiliary.14 Exactly the same form
appears in the present tense sentence in (27b). The simplest assumption
here is that (27b) contains a phonetically unrealized TPres.

The agreement features borne by the participial verb in (27b) are the
participial agreement features [gender] and [number], not the ([number]
and [person]) agreement features which appear on, say, Tcyn. The
presence of [gender] and the absence of [person] features on the Hebrew
participle are not arbitrary facts about this morphological form, but
derive from its being a nominal category, akin to nouns and adjectives.
The Hebrew participle lacks a specification for [person] not because a
[person] slot happens to be lexically absent from its phi set (as is arguably
the case of TP&F), but because there is a conflict between its nominal
nature and the possession of such a slot.

(27) a. Dani haya loves sveder.
Dani be+past-3ms wears +pres-ms sweater
'Dani used to wear a sweater.'

14 The interpretation of such auxiliary-participle structures is habitual, not perfective.
b. Dani loves sveder.
   Dani wears + pres-ms sweater
   'Dani is wearing a sweater.'
c. Dani eyn-o loves sveder.
   Dani neg-3ms wears + pres-ms sweater
   'Dani is not wearing a sweater.'

While there are two phi sets in (27a) and in an eyn sentence such as (27c), a participial one and a T-related one, in this respect, Tpres lacks a phi set altogether; the phi features that appear in (27b) are contributed by the participle.

One should now ask where the (nominative) Case feature is found in present tense sentences like (27b). The choice is limited to T or the participial head. The latter is an unlikely source for a Case feature, because if the participial head had a Case feature, then (27a), which contains both a participle and a finite auxiliary, would have two Case features (as would, by analogy, (27c),) an unwelcome state of affairs.

Suppose, then, that the Case feature in (27b) is contributed by Tpres but since this type of T lacks a phi set, it cannot probe and value Case on the subject. Following Borer 1995, Shlonsky 1997 argues that the participial verb systematically adjoins to T in Hebrew (more precisely, it adjoins to a null auxiliary in T, but this detail can be overlooked). Using standard diagnostics, he shows that the participial present tense verb in (27b) occupies the same position as the auxiliary in (27a). Adjunction of the participial verb to Tpres makes unvalued phi (from the participle) and Case (from Tpres) available on a single complex head and the subject can be successfully targeted. Since the phi set contributed by the participle lacks a [person] feature, it has the consequence of barring a referential pro subject, although both overt subjects (which are independently endowed with reference) and covert non-referential subjects (which do not need association with a person feature) are both perfectly fine with present tense verbs. In this respect, Tpres is functionally equivalent to Tp&F: Both are compatible with non-referential null subjects. There is a major difference between the two T’s however, since only Tp&F is compatible with a referential pro under NSB/C.

Tp&F lacks a lexical slot for [person]. This T head can, nonetheless, be granted a person slot under the feature synchronization process discussed in section 4.2: NSB/C assigns a person feature to pro which is then copied onto Tp&F.

Tpres lacks a phi set and depends on the participial phi set in order to enter an agreement relation with the subject. Although nothing prohibits NSB/C from operating into clauses containing a present tense verb and assigning [person] to the covert subject in such sentences, a problem arises when it comes to synchronizing the modified phi set of pro with that of the participle: The phi set of the participle simply cannot carry a person.

slot, since it is a nominal category. Put succinctly, a participle granted a person feature would no longer be a participle and would fail to match the selectional requirements of T. Thus, while NSB/C of covert subjects of present tense verbs is, in principle, possible, it has computational consequences leading to ungrammaticality.

Eyn sentences differ from eyn-less present tense ones in that T_eym, as opposed to T_pres, contains a [person] slot. It is thus predicted that NSB/C should be possible into eyn sentences. Indeed, (28) patterns with (19) and not with (26).

(28) Dafna ve-Rina lo notnot le-Dani1 matana
    Dafna and-Rina neg give-3pl to-Dani present
    ñse pro eyn-01,=2 mefarsem ma’amari xadaš
    ïwhen neg-3ms publish-3m article new

'Dafna and Rina don’t give Dani a present when he doesn’t publish a new article.'

6. Summary and conclusion

From the perspective of their phi sets, Hebrew has three finite T heads: One which contains a full set of phi features, one which only contains number and one which lacks a phi set altogether. The first is associated with a negative auxiliary that occurs in present tense sentences; we call it T_eyn. The second, labeled T_P&F, characterizes past and future tense sentences and the third, T_Pres, occurs in present tense sentences.

The covert null subject in Hebrew lacks an intrinsic person specification. To adopt the terms of Ritter 1995, it is a Num(ber)P (equivalent to Dechaine & Wiltschko 2002 φP). Agreement between pro and T predictably fails when pro is the subject of T_eyn since the latter’s person feature cannot be valued. Pro is possible with T_P&F, since this species of T only possesses a number feature in its phi set. However, such a pro cannot be interpreted referentially, because it lacks a person feature.

However, pro can endowed with a person feature when it is controlled or bound. (Although the precise nature of this kind of referential dependency remains elusive.) Non-standard binding/Control involves the assignment of a person feature to pro, rendering it capable of reference. Such assignment modifies the phi set of pro and requires a parallel modification of the phi set of T. While T_P&F can be modified by the addition or copying of the person feature from pro, T_Pres cannot be modified because it lacks a phi set. Subject agreement in present-tense sentences without eyn is participial agreement which cannot host a copy of the [person] feature assigned to pro. Consequently, present tense sentences featuring a non-standardly bound/controlled covert subject are judged ungrammatical.

Finally, Hebrew lacks covert subjects referring to the first or second person. This is not an accidental gap, but follows from the fact that the
speech act participants are syntactically encoded by means of a functional category. The existence of covert first and second person subjects is an illusion; they are clitics which appear on the verbal head.

These are the senses in which Hebrew is a partial pro drop language.

7. References


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