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Margaret Speas

University of Massachusetts

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Null Arguments in a Theory of Economy of Projection¹

Margaret Speas

University of Massachusetts

1. Introduction

Since Taraldsen (1978) first formalized the intuition that there is some relationship between "rich" agreement and the licensing of null arguments, numerous theories of this relationship have been proposed, yet the nature of the relationship remains to be illuminated. The most common view, following Rizzi (1986), is that the null pronoun *pro* must be licensed by a designated head, presumably at S-Structure or PF, and must be identified by "rich" agreement, presumably at LF. The central empirical problem that such theories have always faced is the status of languages like Japanese, Chinese and Thai, which have null arguments but lack agreement entirely. The central conceptual problem of such theories is that the designation of a given head as a licenser of *pro* is completely arbitrary.

In this paper, I propose the distribution of null arguments follows directly from the way in which principles of economy constrain the projection of syntactic categories. Under this view, no special licensing condition on null arguments is necessary, and it will follow that null arguments occur in the context of rich agreement or no agreement, but not in the context of agreement which is weak. I will claim that null arguments are found in all and only those languages in which the specifier of AGR-P is not needed to satisfy any condition of the Grammar. In "weak agreement" languages, the specifier of AGR-P must be filled prior to spellout in order to fulfill conditions of economy of projection.

The core of the proposal will be presented in the following section. In Section 3, I will compare my proposal with other currently existing theories of the licensing of *pro*. In Section 4 I will explore the relationship between abstract AGR and agreement morphology. Then in Section 5 I will make some suggestions for how my theory might be extended to null objects and the projection of VP shells (in the sense of Larson (1988) and Hale and Keyser (1991)).

¹ I would like to thank Chisato Kitagawa for invaluable comments and encouragement. I am also grateful to Viviane Deprez, Hagit Borer, Elena Benedicto, Tohru Noguchi, Tom Roeper, Bernhard Rohrbacher and Jeff Runner for very helpful comments and criticism. All errors are my own.

Prior to Section 5, I will be focussing on null subjects, since most of the so-called *pro*-drop languages that have been extensively studied have Subject agreement but no Object agreement. Therefore, I will use the term 'null argument' when I mean to make a general point, although the illustrations prior to Section 5 will all pertain to null subjects.

2.1 On the Relationship between Agreement and *pro*

It is an intriguing and unexplained fact about null Subjects, pointed out by Jaeggli and Safir (1989), that they seem to occur in the context of either very rich agreement or no agreement at all.

(1) Jaeggli and Safir's Generalization:

Null subjects occur in the context of either very rich agreement or no agreement at all.

This is a descriptive generalization, and it is well known that the property that makes agreement "rich" is difficult to pin down. If "rich" is simply defined as "able to license null subjects", then of course the above generalization is vacuous. Jaeggli and Safir, like most researchers, use the term "rich" to mean bearing lots of morphology in some intuitive sense. They offer a more concrete definition which I will discuss in Section 4. Throughout this paper, I will continue to use the term "rich" to refer to the informal property of having lots of morphological distinctions. The formal property associated with licensing null subjects I will call "strong" AGR. The theory I will propose will be a theory of what it is about strong AGR that causes null subjects to be licensed. The relationship between strong AGR and rich agreement morphology will be discussed in Section 4.

So, in languages like Italian and Spanish, the agreement on the verb is rich, i.e. it seems in some intuitive sense to be sufficient without the overt subject, as illustrated in the Spanish paradigm in (2), and so Subject pronouns are not obligatory. Languages like English have some residual agreement, but Subject pronouns are obligatory, and this has been generally attributed to the fact that English agreement is not rich enough to allow null Subjects.

(2)	<u>Spanish</u>	<u>English</u>	
	habl-o	speak	1sg
	habl-as	speak	2sg
	habl-a	speaks	3sg
	habl-amos	speak	1pl
	habl-aís	speak	2pl
	habl-an	speak	3pl

- (3) a. Habla español.
speaks-3sg Spanish
'S/he speaks Spanish'
b. *(She) speaks Spanish.

The relationship between rich agreement and null arguments would be straightforward if it weren't for two complicating factors. First, there are languages like German, in which agreement seems to be rather rich, yet null referential arguments are not permitted, but null pleonastics are permitted. The existence of such languages is one of the reasons for thinking that licensing of null arguments must be independent of identification of null arguments: in German, null arguments seem to be licensed, but not identified with referential features so only possible when pleonastic.² Second, there are languages like Japanese and Thai, in which null arguments are permitted despite the complete lack of agreement³.

- (4) German:
a. arbeit-e arbeit-en
 arbeit-est arbeit-et
 arbeit-et arbeit-en
b. Gestern wurde (*es) auf dem Schiff getanzt.
 yesterday was on the ship danced
 'There was dancing on the ship yesterday'

- (5) Japanese:
Sasimi-o tabe-ru
sashimi-ACC eat-PRES
(I) eat sashimi.

- (6) Summary:
- | | <u>pro licensed</u> | <u>pro identified</u> |
|----------|---------------------|-----------------------|
| Spanish | by INFL | by AGR features |
| English | no | no |
| German | by INFL | no |
| Japanese | by ? | by context or control |

In sum, the principle which allows *pro* to be licensed is independent of the principle which allows *pro* to be identified, and the relationship between rich agr and licensing of *pro* remains obscure.

² German has overt pleonastics which occupy the specifier of CP. The contexts in which null pleonastics occur in German will be explained in Section 2.3.

³ Tateishi (1989) and Noguchi (1991) have argued that honorification in Japanese involves some sort of agreement. Since this agreement does not involve the standard sort of person and number features I will assume that it is some separate phenomenon.

To capture the fact that Agreement seems to be correlated with the presence of null arguments yet is not a necessary or sufficient condition on them, Rizzi (1986) proposed the following principles, in which agreement participates in the identification of *pro*, but not in the licensing of *pro*:

- (7) a. *pro* is formally licensed through Case assignment by a designated head.
 b. *pro* has the grammatical specification of the features of its licensing head coindexed with it.

The licensing class of heads in a given language may include INFL, and rich features of INFL will be shared by *pro* through the coindexation specified in (7)b. However heads other than rich INFL can also serve as licensors, as long as there is a way for *pro* to get phi features. For example, Rizzi argues that Italian has *pro* in object position, and suggests that there is an independent rule that can assign arb interpretation to a direct argument, and that this rule applies in the syntax in Italian but only in the Lexicon in English. Thus, null objects can get (arb) features in Italian but this is not possible in English, so *pro* would wind up featureless and hence is not permitted. I will discuss this proposal further in Section 5.

Rizzi briefly addresses the problem posed by languages like Japanese, and suggests that Universal Grammar offers the option of using phi features in the identification of *pro*, and in languages which do not take that option, other means of identifying *pro* may be used. He leaves open the question of how *pro* is licensed in such languages. Presumably under his theory, INFL would be a designated licensing head in a language that lacks agreement. Thus, under Rizzi's theory, the richness of AGR has nothing to do with whether INFL is designated as a licensing head or not. Rather, the class of licensing heads is completely arbitrary. Thus, the question of why INFL seems to be a designated head in languages with rich agreement or languages with no agreement, but not in languages with weak agreement, remains unanswered.

I suggest that we can find a clue to the answer to this question by taking a closer look at the licensing condition on *pro*. This condition has two unusual properties, both having to do with the special phonological status of *pro*. First, the condition necessitates that the Grammar allow some heads to be designated as licensors of a category with particular phonological properties (namely, the property of being unpronounced). There are no equivalent designations in other components of syntax involving other phonological properties. For example, there do not exist specific heads that license stressed NPs, specific heads that assign theta roles only to overt NPs, or specific heads that subcategorize for NPs with nasal consonants in them.

Second, it necessitates that a particular lexical entry, *pro*, is subject to a special requirement in virtue of its phonological status. Such a condition is especially surprising in that the intuitive content of the need for a special requirement on an unpronounced constituent is satisfied by the identification requirement, independent of an additional licensing condition: if a constituent is not pronounced, it must be recoverable. Intuition aside, there are no other lexical items whose phonological properties cause them to be

subject to some special syntactic requirement. Even the Case filter, which states that all NPs must bear Case to be visible, applies to any NP chain, and in the view of some (eg. Chomsky 1992) also to PRO, hence need not include reference to the phonological properties of the NP. If, as is generally assumed, *pro* is simply a pronoun which lacks phonetic realization, there is no reason to expect its phonetic properties to call for a special licensing requirement.

These two properties of the licensing condition are related, but are distinct in that we can imagine the grammar including elements which are subject to special requirements in virtue of their phonological properties but not including heads that are designated to license certain elements in virtue of the licensee's properties. Likewise, we can imagine the Grammar designating certain classes of heads to license elements with particular phonological properties without there being items that are subject to special condition in virtue of their own properties. At issue here is the fact that the licensing condition is a syntactic condition that makes special reference to the phonological properties of the licensee.⁴

A theory in which no special licensing condition on null arguments is needed will be more in keeping with the working hypothesis of Principles and Parameters theory, that the modules of Grammar are separate and distinct. Below I will elaborate such a theory, based upon a straightforward principle of Economy.

2.2 Projecting Agreement

As a preliminary to the proposal, consider the syntactic status of the morpheme that expresses agreement. As Fukui (1993) points out, agreement, unlike other morphemes like Tense or Aspect, does not receive an independent interpretation, and

⁴ What about the Empty Category Principle? Isn't this another case of a special condition on a category in virtue of its phonologically null status? As Chomsky (1981) and Rizzi (1986) have pointed out, the ECP apparently applies only to nonpronominal empty categories, in fact, to traces of movement. Traces of movement are crucially different from *pro* in that assuming a derivational view of the Grammar, traces occupy positions that have at some point in the derivation been occupied by a constituent with phonetic content.

The intermediate traces of empty operators would seem to be a counterexample to this, but the status of the chain involved here is not clear. Lasnik and Stowell (1991) and Cinque (1990) claim that the foot of the chain is something other than a WH-t (a pronominal variable for L&S and an epithet for Cinque). If null operators are in spec positions and head a garden variety A' chain, this presents a challenge to many of the claims in this paper. If the null operator is a semantically contentful operator that is adjoined to a maximal projection and enters into a binding relation with a pronominal variable, it may not be subject to the requirements that I will propose here. I leave this question open. Thus, although the ECP as currently phrased appears to be a special condition on categories which lack phonological content, it seems clear that it could be recast as a condition on either movement launching sites or on non-head links in an antecedent government chain. To do so brings up many interesting questions that are beyond the scope of this paper. The point I wish to make here is that the existence of the ECP should not be taken as evidence that syntactic principles referring to the phonological content of items are pervasive or desirable.

hence it ought to be absent at LF. The question, then, is whether it is present as an independent syntactic head prior to LF. In most languages that have overt agreement, agreement surfaces attached to a verbal stem.⁵ Belletti (1990), among others, has argued that these morphemes do occupy independent head positions and are affixed to the verbal stem as it moves through in head to head movement. In the case of Italian, the verb first moves into T, picks up the tense morpheme and then moves on to AGR, picking up the agreement morpheme. Hence the tense morpheme is closer to the stem than the agreement morpheme.⁶

Is the Italian-type of representation available for languages like English with weak agreement? As Belletti pointed out, all languages that have strong enough agreement for *pro*-drop seem to also have V-to-INFL movement in the syntax (although the converse is not true). She claims that in Italian the verb moves in order to support the affix that is base-generated there. English lacks both verb movement (at least, verb movement to AGRS) and *pro* drop. In Chomsky (1989) it was suggested that English has affix lowering rather than verb raising, but more recent work dispenses with lowering in favor of the view that the actual affix is base-generated on the verbal stem. Chomsky doesn't discuss whether languages like Italian also have verbs which are base-generated with inflectional affixes attached or whether instead Italian differs from English in this regard.

The view that I will adopt here is one proposed by Rohrbacher (1992), who claims that in languages which have strong agreement, each agreement morpheme has its own lexical entry, while in languages that have weak agreement, the morphemes do not have independent lexical entries.⁷ Rather, verbs in weak agreement languages are listed in the

⁵ The other option is that taken in languages like Warlpiri, where the agreement in part of a second-position inflectional constituent which is not morphologically attached to any verbal stem.

⁶ See Plunkett 1993 and Speas 1991 for arguments that morpheme order is not a sufficient diagnostic for head position. Belletti also presents syntactic evidence that AGR is higher than T in Italian.

⁷ Rohrbacher's claim correlates verb movement with lexical entries for AGR morphemes rather than associating *pro* drop with this property as I am doing. Rohrbacher's generalization is based upon his extensive examination of the Germanic languages in order to pin down the precise nature of the inflectional morphology of those languages which have verb movement vs. those which do not. What he finds is something akin to Morphological Uniformity, but different in interesting ways. Descriptively, it seems that the property that correlates with verb movement is the following:

(1) **The Paradigm-Verb Raising Correlate**

A language has V to I Raising iff it has at least one set of three affixes which mark 1st, 2nd and 3rd person in the singular or 1st, 2nd or 3rd person in the plural.

(Rohrbacher 1991)

Rohrbacher further refines this description, suggesting that having a lexical entry is related to being referential:

(i) The INFL affixes of a language are referential iff in the inflection of regular verbs a and b:

a. In at least one number, the features [1st] and [2nd] are distinctively marked.

b. In at least one person, the feature [sg] is distinctively marked. (Rohrbacher 1992:15)

For *pro*-drop, Rohrbacher suggests that some additional condition is needed, perhaps a condition on Case assignment.

lexicon in verbal paradigms, and hence Agreement has no independent lexical entry in such languages.

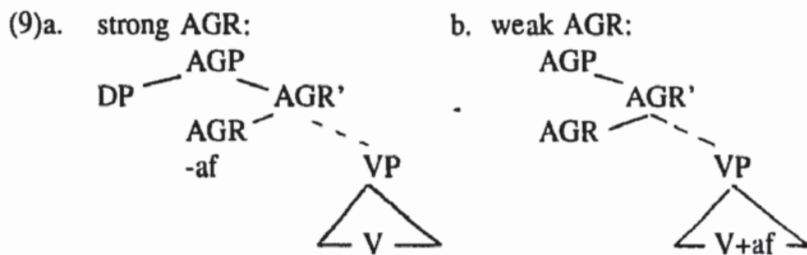
- (8) Rohrbacher's Generalization:⁸
 Strong morphemes have individual lexical entries.
 Weak morphemes do not have individual lexical entries.

Rohrbacher points out that this typological difference correlates in an interesting way with the longstanding debate in the field of morphology about the nature of inflectional morphemes. According to one approach, inflectional morphemes are listed individually in the lexicon and affixed to their host by syntax-like principles (Lieber 1980, Jensen and Strong-Jensen 1984, LaPointe 1980, Fabb 1984). According to the other approach, (Anderson 1992, Beard 1991), inflectional paradigms are created by special rules of morphology, and are mapped onto abstractly specified syntactic structures. Rohrbacher points out that each approach runs into problems, but that such problems can be resolved if we take the view that both theories are correct. In particular, languages with strong morphology are languages in which each inflectional affix has its own individual listing in the lexicon. Since these affixes have lexical entries, they are available to the computational component and hence may head their own projections. Languages with weak morphology are languages in which inflectional affixes do not have independent lexical entries. Rather, they are listed in the Lexicon in paradigms and are inserted into syntactic representations already attached to their host.⁹

In languages with strong agreement, then, a morpheme AGR heads the AGR projection. In languages with weak agreement, the AGR morphology is just part of an inflectional paradigm.

⁸ I have named this Rohrbacher's generalization because he does develop the idea that there are two different kinds of inflection, although as mentioned in fn. 6, for him "strong" inflection is inflection that can trigger verb movement while for me it is inflection that can trigger pro drop.

⁹ Rohrbacher's theory may appear at first glance to be excessively rich, but he makes it clear that it merely makes use of devices which are independently needed in anyone's theory. As soon as we look beyond regular inflection, it seems clear that both listed paradigms and individual morpheme entries are necessary. Listed paradigms are necessary for irregular forms, and individual morpheme entries are necessary for derivational morphology. Thus, Rohrbacher's theory simply makes use of (and in fact constrains) devices which are independently necessary.



The descriptive generalization that emerges is the following:

- (10) a. A language has null subjects if AGR is base generated with a morpheme in it.
 b. A language cannot have null subjects if AGR is base-generated on the Verb.
 c. A language has null subjects if it has no AGR.

Previous works that have noticed a generalization resembling this one have accounted for it by claiming that an occupied AGR is strong/rich enough to license *pro* in subject position. As noted above, such theories do not explain the fact that null subjects occur in languages which lack agreement altogether.

I claim instead that the generalizations in (10) follow directly from a principle of Economy which can be stated as in (11).

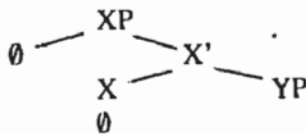
- (11) Project XP only if XP has content.

In strong AGR languages, the affix is base-generated in the AGR head position, and so AGRP has content. However, in weak AGR languages, the affix is base-generated on the verb, and so something else must give content to the AGRP projection. Therefore, either a pleonastic must be inserted in Spec,AGRP, or an NP must move to that position. If the Spec,AGRP remains empty in a weak AGR language, AGRP cannot be projected without a violation of the Economy principles.

I take the Economy principle in (11) to be a sub-case of the general principles of Economy of representation. A projection without content is a representation that receives no interpretation. In a configuration like (12), if both the head and the specifier of XP are radically empty, projection of XP will violate this principle of economy.¹⁰ Such a configuration is technically identical to a configuration which contains YP but not XP, since XP has nothing in its head or specifier.

¹⁰ I include the bar levels X, X' and XP in the diagram only as a notational convenience. See Speas (1990) for a theory in which bar levels are eliminated as primitives of the grammar.

(12)



Before we proceed with the analysis of null argument licensing, it remains to specify what counts as "content" for the purposes of the Economy principles. Since all structures must be interpreted at both of the interface levels, PF and LF, I take the relevant notion of content to be as follows:

(13) A node X has content if and only if X dominates a distinct phonological matrix or a distinct semantic matrix.

If XP in (12) dominates no phonological material except that which is in the complement YP, then XP dominates no distinct phonological matrix. Similarly, if XP dominates no semantic material except that which is in the complement YP, then XP dominates no distinct semantic matrix.

This view of how economy principles constrain the projection of structures disallows the projection of structure at one level which will not be filled until some later level, since projection takes place only in the presence of some distinct content. The effect of (12) is to prohibit the creation of a projection prior to the level in which the projection will have content. Thus, radically empty projections with the sole purpose of serving as landing sites for movement are disallowed.

In a language in which AGR is base-generated on the verb, there is no head with content available to head the AGRP.¹¹ The only way that AGRP can be projected without violating the economy principles is if AGRP has a specifier with content. Therefore, either an NP must move to Spec,IP, or a pleonastic must be inserted.

If AGR is base generated with a morpheme in it, AGR has content and hence AGRP can be projected. There is no necessity for the specifier of AGR to be filled. The null subject, which I assume is base-generated in a VP internal position, may stay in its VP-internal position, and the specifier of AGRP remains truly empty.

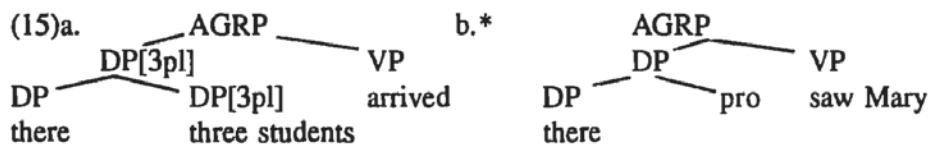
To summarize so far, a language with weak AGR must have a filled Spec,AGRP prior to spellout, while a language with strong AGR may leave Spec,AGRP empty. Before I go on to discuss languages that lack AGR altogether, let us clarify the relationship between Spec,AGRP and the VP-internal subject position. In a language like Italian, *pro* remains in its VP-internal position until spellout. I assume that at LF, *pro* moves to the Spec of AGRP in order to satisfy the requirement that AGR be checked in

¹¹ I reject the view of Chomsky (1992) that the lexicon contains bundles of unpronounced N and V features of the category AGR, which delete after having been checked. This means that in a language in which inflectional morphemes are base-generated on the verb, AGR is "truly empty". This position will be elaborated and defended in Section 3.2.

a Spec-head relation. In a language like English, Spec,AGRP must be filled prior to spellout. This proposal implies that in such a language, *pro* is possible in the Spec of VP in principle, but that some overt element must nonetheless occupy the Spec of AGRP. Hence, we must be sure we can rule out sentences which have a null subject in Spec,VP and a pleonastic inserted into Spec,AGRP. That is, we must rule out sentences like (14).

(14) *There [*pro* saw Mary]

The problem posed by (14) is a general one that arises in any theory in which Spec,IP is disassociated from Spec,VP: why can't a pleonastic cooccur with *pro*? I suggest that this is due to the fact that *pro* does not have its own phi features, and it must receive phi features in a Spec-head relation with AGR at LF. I follow Chomsky (1989) in assuming that at LF, the associate of an expletive adjoins to the expletive. If this associate is an NP with its own phi features, those features may percolate to the dominating node, and thus are in a Spec-head relation with AGR. If the associate is *pro*, there are no features to percolate, and *pro* is only adjoined to the Spec of AGR, it is not itself the Spec, hence *pro* is unable to receive features and the derivation crashes at LF.



Thus, *pro* is permitted in principle within VP in a language like English, but sentences like (14) are ruled out by independent principles.¹² The null subject parameter has to do specifically with a requirement on the Spec of AGRP.

Turning now to languages that lack AGR altogether, my claim is that there is no need for an AGR projection at any level. Hence, the requirements on licensing that projection never arise. Thus, I am suggesting that the AGRP projection is necessary only in languages which have some sort of agreement, no matter how residual. This claim is similar to that of Fukui and Speas (1986), who argued that some languages lack Functional heads, but it is less global than their claim and does not imply any crosslinguistic variation in the way that structures are projected. I would maintain, with Tateishi (1989), that languages like Japanese and Chinese do have functional heads such as TENSE and ASPECT, but they lack the head AGR. My claim is also similar to that of Kuroda (1988), who claims that some languages lack the agreement relation, but I believe that what is lacking is the AGR head, not the agreement relation. I adopt the "big theory" of Chomsky (1992) whereby structural Case must be represented at LF in terms of a Spec-head relation in which the Spec and head are coindexed and hence abstractly agree. However, I take the position that in languages which have AGR features, the relevant head is AGR, while in languages which lack AGR, the relevant head may be

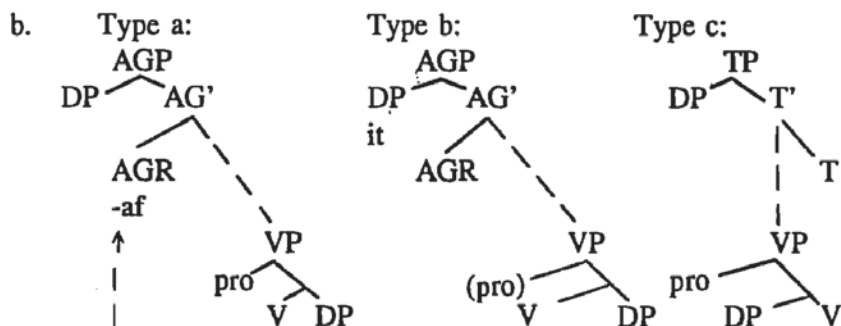
¹² Fukui and Speas (1986) suggested that *pro* in fact does occur within VP in passive sentences, and that this *pro* is the implicit argument.

TENSE, ASPECT, or perhaps the verb (cf. Carstens and Rindler-Schjerve (1989), who project a theory of agreement in which what is necessary is a Spec-head relation, but this need not involve a head labeled AGR.)

In Japanese, then, there is no AGR head at all. This is consistent with the view of Fukui (1993, forthcoming), who claims that the maximal projection of the sentence in English is a projection of AGR, while in Japanese it is a projection of V, and further claims that the topic-oriented property of Japanese follows from the fact that the clause in Japanese, being VP rather than AGRP, is a kind of predicate.¹³

In a language like Japanese, the subject may be null because nothing forces movement into the Spec of AGR, since there is no projection to be made legitimate. The reason that an AGRP projection is necessary in languages with residual agreement is that AGR features, if they exist in a language, must be checked in a Spec-head relation by LF. Since Spellout is the point at which the derivation has no further access to the Lexicon, no new heads can be added to a phrase marker after spellout. Thus, if AGR is to be needed at LF, the AGRP projection must exist prior to spellout. Therefore, in a language which has AGR features, there must be an AGR projection with content before spellout.

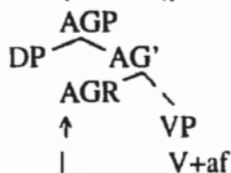
- (16)a. Type a: Morpheme heads AGRP, Spec may be empty
 Type b: Morpheme is attached to V, Spec must be filled
 Type c: No AGR Projection



In the diagrams in (16) there seems to be a relationship between verb movement and strong morphology, since the verb in a Spanish-type language moves to pick up the stranded AGR morpheme. Notice however that verb movement by itself is not sufficient to license null subjects, as evidenced by languages like Yiddish, which have V-movement but do not have null subjects. I would argue that these are languages in which the inflectional morphemes are base-generated on the verb, and then the inflected verb moves into an empty Functional Head. Thus, among languages that have agreement morphology, there is one additional possible state of affairs, as diagramed in (17), (18).

¹³ Fukui (1993) goes on to claim that the presence of agreement in English causes AGRP to need a specifier, and that categories with specifiers are 'closed projections' of X⁰. He is not specifically concerned with the pro-drop parameter, but the implication is that Japanese projections need not be closed. The theory I am elaborating is close to this idea in spirit.

(17) Type d: (Yiddish).



(18) Yiddish:

- a. Zey leyenen ot di bikher.
they read-3pl prt those books
'They read those books'
- b. *Leyenen ot di bikher.
- c.az es kenen fremde mentshu mikh farnam
that es can strange people me entice

(adapted from Heycock and Santorini 1992)

Interestingly, verb movement by itself does not license the projection of the AGRP. Such languages must have a filled specifier of AGRP. This may be because the AGR projection cannot be licensed by a head of a category other than AGR. The projection of AGRP would hence have to be licensed independently as an AGRP, before it could be come the landing site of verb movement. When the specifier is filled, and then is indexed with the head, this could serve to license the phrasal projection as an AGRP.

To summarize, I have proposed that the licensing condition on null subjects follows from an independently needed principle of economy of projection. A maximal projection must have content in order to be projected, and so null subjects are possible either in languages in which the head of AGRP has content, or in languages in which there is no necessity to project AGRP at all.

2.3 Consequences of the Principle of Economy of Projection

One very nice consequence of the view that AGRP projects only if it has content is that the fact that language like English must have overt subjects need not be stated as a substantive principle. That is, the effects of the Extended Projection principle now follow naturally: languages with weak agreement must have a specifier of AGRP which has content, hence they will always have a surface subject, even if no theta role is assigned to an external argument.

A second consequence of the proposal outlined here is that there is now no need for a special licensing condition on *pro*. The languages that allow *pro* will be those which can fulfill the economy principles without having a filled Spec,AGRP. As discussed in Section 2.1, the licensing condition on *pro* runs into empirical difficulties when faced with languages like Japanese which have *pro* but lack agreement entirely, and such a condition has the conceptual problem that it requires syntactic conditions that refer to the

phonological nature of the licensee. In the theory I have proposed, both of these problems are solved. Languages like Japanese can have *pro* because no principles require the projection of a legitimate AGR projection, and so nothing will require an overt specifier. The apparently special properties of null arguments follow from the fact that they lack independent content, and hence cannot suffice to license the projection of an AGR phrase. Thus, their status as phonetically null is incorporated into the theory without special stipulation.

The present proposal does not, however, eliminate the need for conditions on identification of *pro*. There can be languages in which AGR has its own lexical entry and hence suffices to license the AGR projection, but whose AGR features are not strong enough to identify *pro*. German is such a case. German has null subjects only when the subject is pleonastic, and yet not all pleonastics are null in German. The economy of projection proposal turns out to make interesting predictions about the distribution of overt vs. null pleonastics in German. Let us take a look at these predictions. A German inflectional paradigm is given in (19), and the basic data on pleonastics are given in (20).

- (19) German:
- | | |
|------------|-----------|
| arbeit-e | arbeit-en |
| arbeit-est | arbeit-et |
| arbeit-et | arbeit-en |

- (20) a. Es wurde gestern auf dem Schiff getanzt.
 ex was yesterday on the ship danced
 'There was dancing on the ship yesterday'
- b. Gestern wurde (*es) auf dem Schiff getanzt.
 yesterday was on the ship danced
 'There was dancing on the ship yesterday'
- c. Sie sagte, es wurde getanzt.
 she said es was danced
- d.weil getanzt wurde.
 since danced was

In (20), we see that in German, overt pleonastics show up in Spec,CP, but do not appear in Spec,IP(AGRP). The Spec,AGRP may be null when the subject is nonthematic. I would claim that this is because the agreement morphology of German suffices to license the AGRP projection. Under my analysis, (20)b doesn't have an actual null pleonastic in Spec,IP. Rather, Spec,AGRP is truly empty because the head of AGRP is an affix which has its own lexical entry and which thus suffices to license the AGRP projection. The reason that Spec,AGRP can be null only if the subject is nonthematic is because although the AGR affixes in German have independent lexical entries, they are not sufficiently rich to assign phi features to a thematic subject.

In Spec,CP, interestingly, overt pleonastics show up only if COMP does not have a contentful item base-generated in it. A pleonastic is necessary if the moved verb occupies C, but if C is base generated with a word in it, then no pleonastic appears. In Section 2.2 it was demonstrated that verb movement is not in itself sufficient to license a projection: the Functional projection must be licensed by distinct content prior to verb movement.¹⁴ Thus, German shows the effect of the principle of economy of projection in the way in which pleonastics occur in Spec,CP.

3.1 Checking Theory

The principle of economy of projection allows us to eliminate certain redundancies in Chomsky's (1992) execution of checking theory. In this section, I will discuss how the proposal outlined above fits into the general minimalist framework, and into the Checking Theory in particular.

I take the term Checking Theory to refer to a theory of how AGR features get matched with NPs bearing phi features, and how Case gets assigned to NPs that need it. I will focus here on the features that Chomsky calls 'N-features', i.e. those involved in agreement. In Chomsky's (1992) version of Checking Theory, the features involved in agreement appear both on the affixes themselves (which are attached to the verb in English-type languages) and in an unpronounced lexical entry AGR, which is the head of the AGR phrase (as well as on the NP to be agreed with). The unpronounced features of AGR must eventually be matched with both the NP and the verbal affix, and then they disappear. Chomsky supposes that if these unpronounced features do not disappear by the interface level, the derivation crashes because there are features with no interpretation. "Strong" features must be gone by PF, and "Weak" features must be gone by LF.

There is a redundancy in such a system, in that the AGR features are duplicated in AGR and on the verbal affix. But there are three more serious problems with this version of the checking theory that lead me to reject the hypothesis that AGR is an unpronounced bundle of features. First, why should unpronounced features have to disappear by PF? PF allows other null feature bundles, so why not unpronounced features in AGR? Second, there is something amiss in the fact that the features of AGR never get to reach an interface level. This requires that we allow the Grammar to contain lexical entries whose content is never visible at either interface level. Third, by stating the distinction between strong and weak agreement in terms of whether the features must disappear before PF, it reduces the distinction between strong and weak agreement to a mere stipulation, bearing no correlation to the type of morphology, and hence leaving Jaeggli and Safir's generalization unexplained.

¹⁴ In questions, we may assume that a Q morpheme, which has independent semantic content, occupies the head of CP prior to verb movement, and the verb adjoins to the Q morpheme. In questions, then, there is no need for a pleonastic.

For these reasons, I reject the idea that the lexicon contains bundles of unpronounced features of the category AGR. Rather, I assume that phi features are semantic features associated with particular morphemes, either pronouns/NPs, or affixes. These features must be checked by being in a Spec-head relation with an NP bearing such features by LF. This means that in a language in which inflectional morphemes are base-generated on the verb, AGR is "truly empty". My claim is that a "truly empty" AGR is not sufficient to license a projection. More accurately, I mean to claim that "TRULY EMPTY" AGR is not an item that exists in the Grammar as such. There are no categories that lack all content save category features. There are phonologically null lexical items, such as *pro*, which has the syntactically and semantically relevant features [+p, -a]. The difference between this type of empty category and Chomsky's unpronounced AGR is that the AGR features never received their own interpretation. I claim that there are no lexical items with neither semantic nor phonological features. Rather, a "truly empty" head projects only if its specifier is filled with an item having distinct content. Thus, I am rejecting the redundancy inherent in assuming that the lexicon includes phonologically null AGR heads which bear features that match the features found on overt pronouns and on verbal affixes.

4. Morphological Properties and the Licensing of Phrasal Projections

4.1 *Is there a Morphological Correlate to Strong AGR?*

In the theory outlined above, I have adopted the view that there are two types of agreement, which we may term strong and weak agreement. I have proposed that strong agreement has an individual lexical entry, while weak agreement is listed in a paradigm and base-generated attached to the verb. A well-known problem in research into the relationship between agreement and null arguments is the difficulty in finding a systematic crosslinguistic correspondence between some particular morphological properties and the syntactic property of being strong enough to license null arguments or rich enough to identify them.

In this section, I will review one intriguing but flawed hypothesis about the relationship between morphology and strength of agreement, that of Jaeggli and Safir (1989). The purpose of this review is to set up a potential candidate hypothesis and demonstrate the problems with it, so that more insight can be gained into this problem in future work.

Before looking at this hypothesis, let us consider what is at stake. The theory I have proposed above is founded on the assumption that the observation that I have termed 'Jaeggli and Safir's Generalization' is true. That is, I have developed a theory that predicts that null subjects should occur in the presence of either strong agreement or no agreement at all. This theory would be greatly strengthened if we could find a specific morphological correlate of AGR strength.

If there should turn out to be no specific morphological correlate, the one of two things will have to be stipulated: either there remains some abstract notion of AGR strength which will have to be stipulated for each language, and we can continue to associate AGR strength with the existence of a separate lexical entry for each AGR, or there is no relationship whatsoever between INFL and the licensing of null subjects. In this latter case, a language learner would have to learn whether null subjects were licensed in his/her language, but would not learn this as any particular property of INFL.

The former type of stipulation is basically the one that has been adopted in the literature in one form or another, presumably as a sort of intermediate hypothesis pending results on whether a systematic relationship between strong AGR and null subjects can be found. Rizzi (1986), for example, says that the licensing of *pro* involves Case assignment by a designated head. No particular morphological property corresponds to being a designated head.¹⁵ Similarly, Chomsky (1992) suggests that Italian has weak¹⁶ N features in AGR, and so these features need not be matched before LF, and so no NP needs to move to Spec,AGRP. Again, no particular morphological property corresponds to strength of these features. Neither of these theories predicts the correlation noticed by Jaeggli and Safir, that null subjects occur in the presence of rich AGR or no AGR at all. My theory does make this prediction. However, the stipulation found in Rizzi's and Chomsky's theories carries over to mine, unless some morphological correlate of Strong AGR can be found.

4.2 The Morphological Uniformity Hypothesis

In their discussion of the relationship between rich agreement and the licensing of *pro*, Jaeggli and Safir (1989) survey agreement paradigms in diverse languages and suggest the following descriptive generalization.

- (21) a. **The Null Subject Parameter**
Null subjects are permitted in all and only languages with morphologically uniform inflectional paradigms.
- b. **Morphological Uniformity**
An inflectional Paradigm P in a language L is morphologically uniform iff P has either only underived inflectional forms or only derived inflectional forms. (1989:29-30)

Languages like Spanish are morphologically uniform in that each form in the paradigm includes both a stem and an affix. English is not morphologically uniform, since the paradigm includes forms homophonous with the bare stem. Languages like Chinese and

¹⁵ This is clearly needed for Rizzi since Italian verbs are taken to be designated heads for *pro* with an arbitrary interpretation. I will discuss null objects in Section 5.

¹⁶ Chomsky's Weak N features correspond to what I am calling Strong AGR, because these are the cases in which AGR may stand alone without being checked by an NP before LF.

Japanese are morphologically uniform in that all verbal forms lack agreement morphology.

If Morphological Uniformity were the empirically correct correlate to null subjects, the theory that I have developed would receive strong support: languages which have AGR affixes in morphologically uniform paradigms would assign a separate lexical entry to each AGR morpheme, while languages with paradigms that are not morphologically uniform would store the paradigm and not have a separate entry for each morpheme. In the languages that I have looked at so far in this paper, the Morphological Uniformity generalization does seem to hold, even of the contrast between Yiddish, which has a non-uniform paradigm and permits no null subjects, and German, which has a uniform paradigm and permits null expletive subjects.

(22) German: arbeiten 'to work'

	sg	pl
1	arbeit-e	arbeit-en
2	arbeit-est	arbeit-et
3	arbeit-et	arbeit-en

(23) Yiddish: lib-n 'to love'

	sg	pl
1	lib	lib-n
2	lib-st	lib-t
3	lib-t	lib-n

(from Rohrbacher 1992)

Unfortunately, there are clear empirical problems with Morphological Uniformity.

4.3 Swedish: AGR in a language with no Verbal agreement

First, there are languages like Swedish which seem to have Uniform paradigms but do not allow any null subjects.

(24) Swedish:

a. 'throw' present indic.

kasta-r	kasta-r
kasta-r	kasta-r
kasta-r	kasta-r

b. I dag har det kommit manga linvister hit.
today have there come many linguists here.

c. Regnade det i gar?
rained it yesterday

(Platzack 1987)

Swedish meets Jaeggli and Safir's definition of morphological uniformity in that there is no agreement morphology at all (and this is the case in all tenses), only a suffix marking tense. Jaeggli and Safir's hypothesis predicts that Swedish will behave like Japanese in allowing null subjects. Instead, it behaves like English: null subjects are not allowed.

Swedish is distinguished from Japanese in having a residue of agreement in three different parts of the Grammar. First, Swedish pronouns reflect gender and number. Second, Swedish has gender and number agreement between nouns and determiners and adjectives. Third, the past participle, which "functions, in effect, as an adjective" (Auletta 1975:xxvii) shows the same agreement as other adjectives.

(25) Pronouns:

jag	'I	vi	'we'
du	'you'	ni	'you'
han	'he'	de	'they'
hon	'she'		
den	'it' (common gender)		
det	'it' (neuter)		

(26) Det-Adj-N agreement:

- a. en fin lägenhet
a fine flat (common gender)
- b. ett fint museum
a fine museum (neuter gender)
- c. två museer
two museums

(27) past participles:

- a. Brevet var skrivet.
letter-the was written
'The letter was written'
- b. Breven var skrivna.
letters was written-pl
'The letters were written'

The Swedish facts are a counterexample to Jaeggli and Safir's hypothesis about the relationship between overt morphology and null subjects. However, they seem to support their more general observation that null subjects are impossible in languages with weak agreement. Although the verbal system in Swedish no longer includes any agreement morphology, the presence of the residual agreement with adjectives and determiners somehow places Swedish in the class of languages with weak AGR. This kind of case makes it clear that the particular property of morphological uniformity is not the key to

the classification of Agreement types. Rather, as suggested by Kuroda (1988), there seem to be languages like Spanish, English and Swedish, which do have agreement in some form as part of their grammar, and languages like Japanese, which do not. We can make Swedish consistent with the Morphological Uniformity hypothesis if Morphological Uniformity is revised as follows:

(28) **Morphological Uniformity** (revised)

An inflectional Paradigm P in a language L is morphologically uniform for Feature F iff P has only derived inflectional forms expressing F.

This revision preserves the property of morphological uniformity as the property which is correlated with agreement strength, but does not classify total lack of agreement as a sub-type of uniformity. Thus, Jaeggli and Safir's null subject parameter must be replaced by the descriptive generalization that I have been defending here:

(29) Null subjects are permitted in languages which lack agreement entirely or in languages with morphologically uniform agreement.

Under the theory being defended here, we are led to claim that Swedish requires an AGR projection at LF because the presence of residual agreement signals that it is an agreement type language. Since there is no overt morphology to license that AGR projection, an overt subject is needed. I do not know how the presence of residual agreement would lead to the postulation of an AGR projection. The fact that past participles show agreement, however, is interesting. Perhaps the presence of the constructions with past participles signals the presence of AGR projections in the language, and once the language learner learns that such projections exist, they are assumed to be required in general. How this works will need to be explored carefully in future work.

4.4 *Russian: No null Subjects in a language with Rich Agreement*

Benedicto (this volume) analyzes Russian, which is another potential counterexample to the Uniformity hypothesis, by claiming that overt pronouns are really clitics, and so null subjects are permitted after all. Russian paradigms are entirely uniform, with agreement morphology that looks very rich, yet overt pronouns are obligatory¹⁷.

¹⁷ According to Benedicto, null expletives are permitted in Russian, and there is 'ellipsis' of arguments. She classifies Russian as superficially non-pro-drop because the pronouns which appear are not contrastive as pronouns are in a language like Spanish.

(30) Russian (from Benedicto, this volume)

'to work' (pronouns are not contrastive)

1sg	ja rabotaju
2sg	ti rabotajesh
3sg	on, ona rabotajet
1pl	mi rabotajem
2pl	vi rabotajete
3pl	onji rabotajut

For Russian, Benedicto argues that the obligatory pronoun is unlike a pronoun in a language like English. Rather, it is a clitic that is attached to *agr*, and the fact that it is obligatory follows from factors independent of the licensing of *pro*. In her analysis, Russian actually does have *pro* in subject position, licensed by a combination of AGR and the clitic "pronoun". Thus, her proposal would allow Jaeggli and Safir's descriptive generalization to be maintained: Russian is Morphologically Uniform and therefore allows null subjects, but it also happens to have a type of agreement that must host a clitic pronoun, and so it appears that the subject is obligatory.

4.5 Hebrew: Partial Pro-Drop

As Benedicto points out, the question of the morphological trigger for the licensing of null pronouns is complicated by the existence of languages like Hebrew, in which null pronouns occur only in some persons and numbers, as illustrated by the nonpresent past paradigm in (31):

(31) Hebrew (from Benedicto, citing Borer 1986, 1989)

'eat' (Nonpresent Past)

1sg	'axalti
2sg	'axalta, 'axalt
3sg	* <i>(pn)</i> 'axal, 'axla
1pl	'axalnu
2pl	'axaltem, axalten
3pl	* <i>(pn)</i> 'axlu

In this nonpresent past paradigm, null subjects are permitted in first and second persons, but not in third person. In this particular paradigm, the persons which allow null subjects are those which have an affixal agreement. This situation contrasts with that in a language like French, in which affixal agreement is present in some persons, yet these persons do not allow null subjects. This causes difficulty for any effort to explain null subjects in terms of some property of a paradigm.

Hebrew differs from French, however, in that it possesses two different types of paradigmatic morphology. The first is the process whereby consonantal roots are inflected by alternations in the surrounding vowels. Affixation such as that observed above is a second type of inflection. Perhaps the affixes above are really incorporated

pronouns, since they constitute a process that is additional to the basic process of verbal inflection.

4.6 Summary

The generalization that emerges about the relationship between overt morphology and agreement strength is that a language has strong agreement if it has an overt affix for every person and number. A language has weak agreement if there is some evidence that the language is an agreement type language, but there is not an overt affix for each person and number. In the theory proposed here, if a language has an overt morpheme for each person and number, then that morpheme has an independent lexical entry. Otherwise, any morphology present is base-generated on the verb. More research is needed to determine what it is for a language to be an agreement type languages, what the circumstances are under which apparent pronouns can actually be clitics, and what the circumstances are under which apparent affixes can actually be clitics.

5. On Null Objects

5.1 Designated Heads and Generalized Control

I have claimed that null subjects are licensed whenever they are not needed as a specifier to license the presence of a projection. If this theory is to be extended to null objects, then it must be the case that null objects also are possible only if they are not needed to license a projection. So, in a language like English, overt objects must be needed to license some projection. In this section, I will propose that this is indeed true, and that the relevant projection is not ObjectAGR, but a VP shell projection in the sense of Hale and Keyser (1991).

The reason that it is unlikely that null objects are related to the licensing of Object AGR is that the correlation we found for subjects between null subjects and strong or no agreement does not hold.

First, Italian and English both lack overt object agreement, yet Italian allows null objects where English does not¹⁸, as Rizzi (1986) has demonstrated.

¹⁸ One context in which English does allow null objects is that termed by Massam and Roberge (1988) the Recipe context. They point out that the Recipe Context Null Object is possible only in imperative null subject context, that is, only in a context where there is no inflection at all. This does suggest a connection between inflection and null objects, contrary to the discussion in the text. This connection must remain unexplained here.

- (i) a. First, take two eggs, 1/2 cup of flour and 3 tsp sugar. Beat well, and cook for 5 minutes. Serve while still warm.
 b. *You must beat ___ well, and then you cook ___ for 5 minutes. You will then serve ___ while still warm.
 ??You then try PRO to beat ___ carefully. (from Massam & Roberge (1988))

- (32) a. Questo conduce [e] a PRO concludere quanto segue.
 this leads to conclude what follows
 'This leads one to conclude what follows'
- b. *This leads [e] to conclude what follows.

Second, it has been demonstrated by Cole (1987), Yoon (1985), Hoonchamlong (1991) among others, that languages which lack agreement altogether vary with respect to the licensing of null pronominal objects. Huang (1984) examined Chinese and argued that perhaps null pronominal objects are never possible in the absence of Object Agreement. However, the above authors have used Huang's arguments for Chinese to show that other languages, such as Thai and Korean, differ from Chinese precisely in allowing pronominal null Objects.

- (33) Chinese:
- a. Zhangsan_i shuo Lisi kanjianle $0_{j,r_i}$.
 Z says L saw
 'Zhangsan_i says Lisi saw him_{j,r_i}'
- b. OP_{j,r_i} [Zhangsan_i shuo [Lisi kanjianle $0_{j,r_i}$]]
- (34) Korean: (Yoon 1985)
- a. Chelwu_i-ka [Yenghi-ka *pro*_i hyeppakha-ess-ta]-ko
 C-NOM Y-NOM threaten-PAST-DECL-COMP
 cwucangha-ess-ta
 claim-PAST-DECL
 'Chelwu_i claims that Yenghi threatened him_i'
- Thai: (Hoonchamlong 1991)
- b. Nit_i bɔ̀ɔk wáa Nuan hěn *pro*_i
 N speak say N see
 'Nit_i said that Nuan saw him_i'

These examples illustrate one of the ways in which Huang's arguments from Chinese, when extended to Korean and Thai, show that Korean and Thai, unlike Chinese, allow null pronominal objects. In Chinese, an embedded null object cannot be coreferential with the matrix subject. Huang proposed that this is because the object cannot be a pronoun, but is rather a null variable, bound by a null topic. In Korean and Thai, embedded null objects can be coreferential with the matrix subject, behaving exactly like a pronoun.

Two tacks have been taken in the literature to attempt to explain the distribution of null objects. Both wind up amounting essentially to a stipulation that null objects are or are not permitted in a given language. Perhaps this sort of stipulation is the best we can do, but if so, this undermines our efforts to account for the distribution of null subjects without stipulation. After a brief discussion of the two existing proposals, I will sketch

out some ideas about how my theory might be extended to null objects, yielding a more explanatory theory of their distribution.

As was discussed above, Rizzi (1986) proposed that *pro* is formally licensed through Case assignment by a designated head, and that languages vary with respect to which heads are designated. In Italian, both INFL and V are designated heads, while neither are in English. He mentions languages which lack agreement altogether, but leaves open the question of how or whether they fall under his theory. Under this theory, there should be no correlation whatever between richness of agreement and the licensing of null arguments (although there could be a correlation between rich agreement and the identification of null arguments). A given head either is or is not a designated head. Since Italian verbs do not seem to differ from English verbs with respect to object agreement, such a stipulation seemed warranted. Below, I will suggest a difference between Italian and English verbs that allows us to predict that Italian will have null objects while English will not. Here, I simply draw attention to the stipulative nature of Rizzi's proposal.

Huang (1984), looking at Chinese, proposed that general principles of Control operate to rule out null pronominal objects in any language that does not have object agreement. As mentioned above, Huang observed that Chinese null objects seem to be variables rather than pronouns. He proposed that they cannot be pronouns, because if they were, they would be subject to a Generalized Control Rule (GCR), which would obligatorily coindex them with the subject of their clause, yielding a violation of Binding condition B. Thus, in (36), the empty category cannot be *pro*. If it were, the GCR would force it to be controlled by the embedded subject. Since the empty category therefore must be a variable, it cannot corefer with the matrix subject, because if it did Condition C would be violated. Thus, the empty category must be bound only by a null topic.

(35) Generalized Control Rule: (Huang 1984)

An empty pronominal is controlled in its Control Domain

Control Domain: The lowest NP or S that contains the pronominal and a SUBJECT accessible to the pronominal

(36) Zhangsan_i shuo Lisi_j kanjianle $\emptyset_{i/j/k}$.

Z says L saw

'Zhangsan_i says Lisi_j saw *him_i/*her_j/ him_k'

If the GCR is completely general, then it should turn out that no languages without Object Agreement can have null pronominal objects. As noted above, however, there are languages which, by Huang's criteria, do seem to have null pronominal objects. Cole et al. proposed that the GCR is parameterized: languages like Thai do not obey the GCR. The problem with this is that Huang's GCR was designed to be a simple extension of the principles of Control, and was intended to be subject to internal parameterization with respect to the possible minimal domain and possible controllers. However, it was not intended to apply only in some languages. Further, there is no clear independent evidence of the operation or lack of operation of the GCR in the relevant languages. If we have

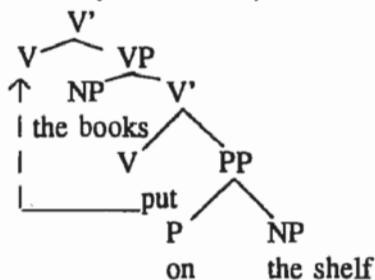
to stipulate whether a given language uses/does not use the GCR, as Cole suggested, then we might as well simply stipulate that the language does/does not allow null pronominal objects. Thus, as with the designated head theory, we are left with a stipulation that a given language either does or does not allow null pronominal objects.

5.2 VP Shells and Economy

In this section I will suggest that the economy principles which I have claimed restrict the distribution of null subjects are also responsible for restricting the distribution of null objects. The idea is that null objects are licensed if they are not needed in order to allow the projection of a VP shell in the sense of Hale and Keyser (1991) and Larson (1988).

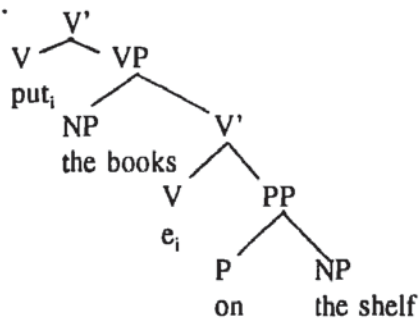
Larson and Hale and Keyser propose that the internal structure of VP includes more than one maximal projection of the predicate. That is, they suggest that in addition to the immediate projection of the lexical head, there is an upper VP shell into which the verb moves. The direct object, in their theory, occupies the specifier of the internal VP, and the verb moves over it to reach its surface position.

(37) VP "shells" (Larson 1988, Hale and Keyser 1991)



Actually, it is unclear whether the verb moves to its surface position, or is base-generated in the upper VP and controls the lower V position. Hale and Keyser use the movement account because they want to claim that a phrase like 'shelve the books' is derived through movement from an underlying structure which is just like (37), and in which the N 'shelf' moves through an empty P, an empty V, on up to the higher V. The problem with this (pointed out to me by Hagit Borer(p.c.)) is that for many such derivations, there is ample evidence that the resulting verb must be formed in the lexicon rather than in syntax. These problems might be avoided if a fully derived verb were inserted into the higher position, and controlled lower positions. For the simple verb phrase in (37), this results in a structure like (38).

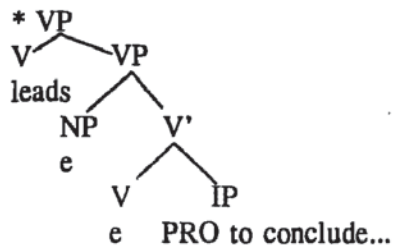
(38)



We may note that the operation of a general principle of economy such as the one that I made explicit above in (11) is implicit in Hale and Keyser's and Larson's work. In their theories, VP shells are allowed to be projected above the VP which projects from the verbal lexical entry. Presumably this process is restricted so that only XPs which will receive some sort of interpretation can be projected. It is interesting then, if we find empirical consequences supporting the presence of such a principle.

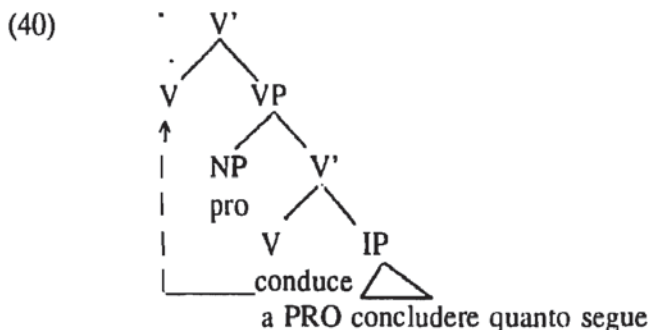
Suppose that (38) is the underlying structure for a ditransitive VP in English. The lower verbal head is empty. By the economy principles discussed above, we would expect that the specifier of this projection could then not be empty. If it were, both the head and the specifier would be empty and the lower VP projection would not be licensed. (Recall that *pro* does not count as a specifier with content, because it does not have phi features until they are filled in by agreement or control.)

(39) English:



I would like to tentatively suggest that languages which lack null object pronominals use a control-type structure like (38) as the underlying structure for transitive and ditransitive VPs, and that languages like Italian which allow null objects use a raising type structure like (37), as illustrated in (40).¹⁹

¹⁹ It is not clear whether the higher head to which the verb moves in Italian is actually a higher verbal shell or the first available Functional projection that it lands in on its way up to AGR-S.



There is an interesting independent difference between English and various Romance languages which may result from this proposed underlying difference. This is the fact that certain verbs in English may be interpreted as involving 'conflation' (Talmy 1985) of the path with the verbal action, whereas this conflation is apparently not possible in Spanish or Italian. In English, a sentence like (41) is ambiguous. It either mean that the boat was just floating under the bridge, or that the boat floated on a path which passed under the bridge. Talmy (1985) and Rapoport (1987) report that such sentences in Spanish are not ambiguous. Preliminary inquiries indicate that they are also not ambiguous in Italian.

(41) The boat floated under the bridge.

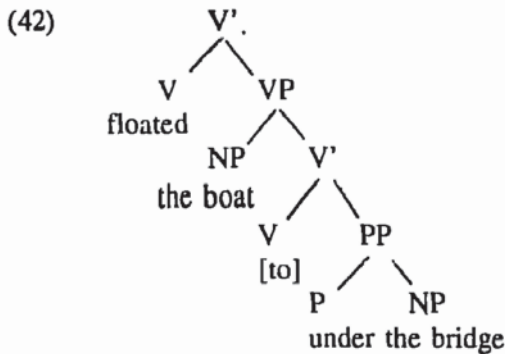
I suggest that this difference is due to the differences in the underlying structure of VP in the two languages. In English, transitive VPs have a structure in which the verb controls an empty head within the lower shell. In Italian, the verb starts out in the lower VP. This means that in English there must be a lower head, whereas in Italian, it is not clear that the upper verbal head serves any purpose. Let us suppose, pursuing the idea in fn.19, that Italian verbs move directly to some functional head. Now the English structures have an extra head. I suggest that the lower head may receive an interpretation, and that this interpretation corresponds to the path which is taken to be conflated with the meaning of the verb.²⁰

²⁰ I have assumed that the boat is the underlying direct object of float. Under the theory I am suggesting here, we might expect that path conflation will take place only with unaccusative verbs. This is not the case - it takes place I believe with any verb that can normally be assumed to have an inherent path:

- (i) a. Mary walked under the bridge (ambiguous)
 b. Mary slept under the bridge (unambiguous)
 c. Mary arrived under the bridge (unambiguous)

walk is unergative, yet path conflation is possible. slept is unergative, and path conflation is not possible. arrived is unaccusative, but path conflation is not possible.

Perhaps the path endows the head with semantic content, allowing it to head a projection even with an unergative verb.



In Italian, since the lower head is not empty, it is not available to receive this additional interpretation, and so parallel sentences are not ambiguous.

I would speculate that the difference in underlying structure derives from the difference between English and Italian with respect to verb movement. To my knowledge, Italian, Spanish and French, which all have overt V-to-I movement, do not have path conflation with motion verbs. Perhaps the V-raising within a VP shell is possible only in languages which show independent evidence of Verb raising. Since English does not have verb raising, the control structure is assumed by the language learner, and the possibility of path conflation follows. These remarks are of course very preliminary, and should be pursued in a study of possible correlates of the type of conflation that we find in English.

6. Conclusion

I have proposed in this paper that a very general principle of economy of representation constrains how maximal projections are licensed in a way that explains the distribution of null subjects, and possibly all null arguments. My suggestion is that, adapting the proposal of Rohrbacher (1992), Strong AGR is listed in the lexicon with each affix having an individual lexical entry, while Weak AGR is listed attached to its verbal host in a paradigm. This proposal, combined with the general economy principle that XP is projected only if X or Spec,XP have content, yields the result that null Subjects are not allowed in languages with Weak AGR, since in such a language the head of AGRP will have no content. Language which lack agreement altogether, such as Japanese and Thai, do not project an agreement phrase at all, and so the question of the content of such a phrase does not arise.

The Extended Projection Principle follows very naturally under this theory. We expect to find overt pleonastics in just those environments where the head of a necessary phrase does not have the content required to license the projection. Evidence from German suggests that this explanation of the distribution of pleonastics is superior to previous explanations that were linked to some version of the Extended Projection Principle.

I have discussed the relationship between Strong AGR and specific features of the Morphology. If certain apparent counterexamples can be dealt with, there is some chance that a (revised) version of Jaeggli and Safir's Morphological Uniformity Hypothesis might capture the morphological property that is corellated with the property of being Strong, i.e., with the property of having an independent lexical entry. If that hypothesis turns out to be unsalvageable, then we are left with a stipulation that certain languages have Strong AGR.

I also made some tentative suggestions about the application of the economy principles to the projection of VP shells, and hypothesized that null objects are possible only in languages in which V raising is possible within a VP shell. If this is correct, then we may have found a syntactic correlate to the process of path conflation.

If the proposals outlined here are on the right track, then the licensing condition on null arguments will no longer need to be stipulated. The role of the identification condition is not clear to me. Are there languages in which *pro* is licensed but not possible because it cannot be identified? Further investigation of the identification condition may help us to solve the problems raised by the partial *pro*-drop languages like Hebrew.

If the proposals here are on the wrong track, then it would seem that the project of looking for an explanatory theory of the licensing of *pro* is itself on the wrong track. It is perfectly conceivable that a language learner could begin with the assumption that all arguments must be overt, and then could learn which arguments could be null in a given language (or, which heads are designated licensing heads) through positive evidence. This position contradicts that most accepted view of the default setting of the null subject parameter (Hyams 1986, 1989), which is based on the observation that children begin by leaving arguments empty and only later learn if their language is not a null subject language.

The answer to this question may depend on the correct characterization of how the language learner learns the setting of the null subject parameter. Investigations (Hyams 1986, Hyams and Jaeggli 1988, Déprez and Pierce 1993, Lebeaux 1988) show that children set this parameter at just about the time that they acquire functional categories. The theory I have outlined fits very neatly with this observation²¹: in early child language, all languages are like Japanese. Null subjects are permitted because no AGRP is assumed to exist. When the child learns that his/her language has AGRP, s/he must at the same time learn whether AGR is strong or weak. If there is some morphological trigger for the presence of Strong AGR, this learning will be straightforward. If there is no morphological trigger, perhaps the presence of null subjects itself serves as a trigger.

²¹ One controversy among the cited authors is whether, as claimed by Radford (1988), functional projections are entirely absent in child language, or, as argued by Déprez and Pierce, functional projections are present but certain types of movement into them is not done at early stages. My proposal is consistent with either of these views if the appearance of functional categories can be learned category by category.

Under this view, there is no null subject parameter, only an AGR strength parameter, coupled with the general principles of economy of representation.

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Dept. of Linguistics
South College
University of Massachusetts
Amherst, MA 01003

speas@cs.umass.edu