In Full Pursuit of the Unspeakable

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In this paper I will propose a well-formedness condition on PF objects. This condition will yield the empirically desirable effects of Chomsky's (1993) Procrastinate, and (I will argue) will have a number of other welcome consequences as well. I assume the Copy Theory of movement, according to which movement involves the creation of multiple copies of the moved element in the various landing sites of movement. I will refer to the maximal set of copies of a given element created by this copying process as a "chain". Chains, I will argue, are subject to the principles of PF well-formedness in (1):

(1) a. PF must receive unambiguous instructions about which copy in a chain to pronounce.
b. A strong feature instructs PF to pronounce the copy in a chain with which it is in a feature-checking relation.

As the condition in (1b) makes clear, I will be assuming the standard Minimalist division of syntactic features into "strong" and "weak" features. Strong features will be those which typically force overt movement, while weak features typically do not (a result which I will attempt to derive from the conditions in (1)). It seems clear that this division is fairly ad hoc, and should ideally be replaced with something more explanatory; that is, it should be possible to deduce whether a feature is strong or weak, in the terms I will be using here, from other properties of the head bearing the feature. Cheng (1991), for

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The abbreviations used in this paper are:

ACC	accusative	INDIC	indicative	Q	interrogative
APPL	applicative	NEG	negative	REL	relative
ASP	aspect	NL	nominalizer	SM	subject marker
COP	copula	NOM	nominative	TOP	topic
EMPH	emphatic	OM	object marker	WH	wh-question marker
FEM	feminine	PL	plural	3	third person
GEN	genitive	PRES	present		

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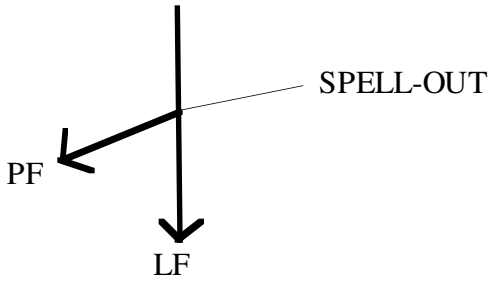
instance, claims that wh-features on C^0 are weak, in our terms, just in case they appear on a phonologically overt head. As it is not clear to me, however, that anyone has yet accomplished a successful reduction of the strong/weak distinction to other, less abstract properties of heads, I will continue to use this distinction in what follows. Hopefully, the theory which I will develop can be restated in terms of whatever is used to supplant feature strength.

Finally, I will assume the "T-model" of the derivation, schematized in (2):

(2)



The model in (2) is that of Chomsky (1995); the derivation begins with a Numeration of lexical items and constructs from them a Logical Form (LF), which is a set of instructions for the semantic component. At some point in the course of this derivation (typically referred to as Spell-Out) a representation is sent to Phonological Form (PF), where it is interpreted by the phonological component. I will refer to the part of the derivation which precedes Spell-Out as the "overt syntax", and to the derivation following Spell-Out which results in an LF as the "covert syntax". The principles in (1) will constrain those operations which take place in the overt syntax, these being the operations which affect the phonological representation. Operations in the overt syntax, then, cannot create representations which violate (1), although covert operations may violate (1) freely. Let us begin by seeing how this will yield the effects of Procrastinate.

1. Procrastinate

The chain in (3) is an example of an overt movement which will be ruled out by (1):

(3) ***[weak]** **X**
: 1
z--------m

The chain in (3) is not a well-formed PF object; there are two copies which are both candidates for pronunciation, and PF has no way of choosing between them (since neither is associated with a strong feature). Operations in the overt syntax, therefore, are barred from producing chains like (3); that is, overt movement cannot be triggered by a weak feature.

Next, consider two chains which (1) will allow:

(4) a. **[strong]** **X**
: 1
z------m

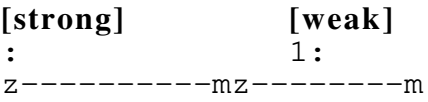
b. **X**

The chain in (4a) is a well-formed PF object; although PF is presented with two candidates for pronunciation, only one of them is associated with a strong feature, and PF therefore receives unambiguous instructions to pronounce that member of the chain. The trivial chain in (4b) is also a well-formed PF object; here there is only one candidate for pronunciation, and there is therefore no question of deciding what to pronounce.

Thus far, (1) yields the same result as Procrastinate; overt movement to check a weak feature is ill-formed, while overt movement to check a strong feature is well-formed, as is remaining in situ. There are, however, a number of empirical differences between (1) and Procrastinate, as we will now see.

2. Movement "through" a weak feature

The well-formedness condition in (1) allows chains of the following type:

(5)


(1) allows overt movement to check a weak feature, as long as it is followed by overt movement to check a strong feature. The resulting chain will instruct PF to pronounce its highest copy. What we expect, then, is to find a class of syntactic positions which cannot be moved to unless the moving element undergoes some kind of further movement; in terms of the theory developed here, such positions will be the ones associated with weak features.

2.1. French

In fact, there are many examples of positions of this kind. One such position is that associated with participial agreement in French (Branigan 1992, 33-34):

(6) a. *Josèphe a écrit**e** cette lettre
Joseph has written-FEM this-FEM letter
'Joseph wrote this letter'
b. Quelle lettre Josèphe a-t-il écrit**e**?
what-FEM letter Joseph has-he written-FEM
'What letter did Joseph write?'
c. la lettre que Josèphe a écrit**e** hier
the-FEM letter that Joseph has written-FEM yesterday
'the letter that Joseph wrote yesterday'
d. Cette lettre, Josèphe l'a écrit**e** hier
this letter Joseph her-has written-FEM yesterday
'This letter, Joseph wrote yesterday'
e. Les lettres ont tous été écrit**e s**
the-PL letters have all been written-PL
'The letters have all been written'

French participles cannot agree with objects in situ, but can agree with objects which have undergone any kind of further movement. In this theory, we can say that the position which triggers participle agreement in French is associated with a weak feature; overt movement to this position is therefore only possible if followed by a second movement triggered by a strong feature.

2.2 Chichew$a

Bresnan and Mchombo (1987) discuss object agreement in Chichew$a, which bears a strong resemblance to the French facts described above. In terms of the theory under development here, we will say that Chichew$a object agreement has weak features; thus, we expect that only NPs which undergo some kind of movement will be able to trigger object agreement by landing in the specifier of AgrOP on their way to some higher position.

Chichew$a verbs always agree with their subjects in person, number, and gender, and may optionally agree with their objects as well. If no object agreement is present, the object must immediately follow the verb[1], but word order is otherwise free (Chichew$a, Bresnan and Mchombo 1987, 744):

(7) a. Njûchi zi- ná- lúm -a alenje (SVO)
bees SM-PAST-bite-INDIC hunters
'The bees bit the hunters'
b. Zinálúma alenje njûchi (VOS)
c. *Alenje zinálúma njûchi (OVS)
d. *Zinálúma njûchi alenje (VSO)
e. *Njûchi alenje zináluma (SOV)
f. *Alenje njûchi zináluma (OSV)

Objects with which the verb exhibits object agreement exhibit a greater freedom of word order than those that fail to trigger agreement. Bresnan and Mchombo analyze the direct object in these cases as a dislocated topic (Chichew$a, Bresnan and Mchombo 1987, 745):

(8) a. Njûchi zi- ná- **wá**-lum -a alenje (SVO)
bees SM-PAST-OM bite-INDIC hunters
'The bees bit them, the hunters'
b. Zináwáluma alenje njûchi (VOS)
c. Alenje zináwáluma njûchi (OVS)
d. Zináwáluma njûchi alenje (VSO)
e. Njûchi alenje zináwáluma (SOV)
f. Alenje njûchi zináwáluma (OSV)

Thus, the direct object is able to move when it triggers agreement on the verb. In fact, Bresnan and Mchombo (1987) give evidence from the behavior of tones in Chichew$a that even in examples like (8a) and (8b), where the object does not appear to have moved, it has in fact undergone string-vacuous rightward extraposition. There is excellent evidence, then, that when the Chichew$a verb agrees with its object, the object must undergo some kind of movement (which is sometimes string-vacuous but can be detected by its effects on tone).

Similarly, object agreement appears in relative clauses and cleft constructions, cases presumably involving movement of a null operator (Chichew$a, Bresnan and Mchombo 1987, 769):

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[1] The object does not appear to have incorporated into the verb in these examples; inflectional morphology intervenes between the verb stem and the direct object.

(9) a. Ndi- ku- lír -ír -a mkángó uméné fîsi á- ná- **ú-** dy -a
SM-PRES-cry-APPL-INDIC lion REL hyena SM-PAST-OM-eat-INDIC
'I'm crying for the lion that the hyena ate'
b. Sí m kángó uwu uméné fîsi á- ná- **ú-** dy -a
NEG.COP. lion this REL hyena SM-PAST-OM-eat-INDIC
'It's not this lion that the hyena ate'

On the other hand, wh-in-situ cannot trigger object agreement (Chichewa, Bresnan and Mchombo 1987, 759):

(10) a. (Kodí) mu- ku- fún -á chiyâni?
Q SM-PRES-want-INDIC what
'What do you want?'
b. *(Kodí) mu- ku- **chí-** fún -á chíyâni?
Q SM-PRES-OM want-INDIC what
'What do you want?'

Finally, there is one one further possible trigger for object agreement, which will be discussed further in section 5; object agreement may appear when the object is a null pronominal, though not with overt pronominals (Chichewa, adapted from Bresnan and Mchombo 1987, 769):

(11) a. Fîsi a- ná- **ú-** dy -a
hyena SM-PAST-OM-eat-INDIC
'The hyena ate it'
b. Fîsi a- ná- dy -á i*wo
hyena SM-PAST-eat-INDIC it
'The hyena ate it'

Thus, Chichewa object agreement seems to be triggered only by elements which undergo some kind of movement (and by phonologically null elements, a fact to which we return in section 5). The distribution of Chichewa object agreement is highly reminiscent of that of French participial agreement, and can be captured by the same theory. In the theory developed here, these examples of French and Chichewa agreement both have weak syntactic features. Overt movement to check these features is thus impossible unless followed by further movement to check a strong feature in a higher position. Other candidates for agreement of this kind include agreement in Mohawk (Baker 1996) and Irish (McCloskey and Hale 1984).

3. Escaping ellipsis

Another kind of overt movement to check a weak feature which this theory would allow would be movement out of an ellipsis site:

(12) **[weak]** **[α** **X** **]**
: 1
z----------m
(α=ellipsis site)

I assume a theory of ellipsis like that developed in Tancredi (1992), in which ellipsis is essentially a phonological phenomenon; a constituent which is present in the syntax is given a null representation in the phonology. On a theory of this kind, to say that α is an ellipsis site is to say that PF receives instructions not to pronounce any part of α. If this is correct, then the chain created by the movement in (12) contains only one candidate for

pronunciation, namely the higher copy. This chain is therefore a well-formed PF object; since there is only one candidate for pronunciation, there is no question of deciding among competing candidates. Of course, if α were not an ellipsis site, the chain in (12) would not be well-formed, for reasons already stated; there would be two candidates for pronunciation, and no way of deciding which to pronounce. We should expect to see, then, that ellipsis makes possible certain kinds of overt movement which are not possible without ellipsis.

This expectation leads us to a possible account of Gapping:

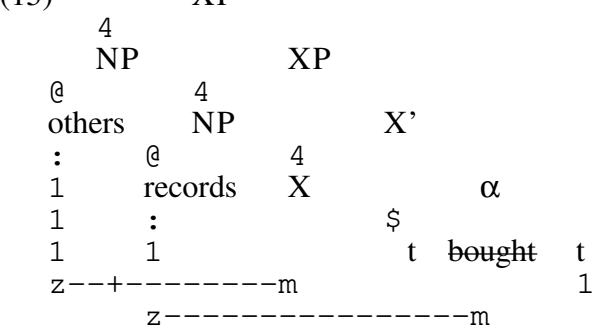
(13) Some bought books and others ~~bought~~ records.

Gapping involves ellipsis of a portion of the verb phrase, including the verb but excluding one or more VP-internal constituents (following Johnson 1994, I will refer to these non-elided constituents as *remnants*). A number of accounts of Gapping have postulated movement of the remnants out of some constituent which then undergoes ellipsis (see Pesetsky 1982, and also Jayaseelan 1990 and Lasnik 1995's accounts of Pseudogapping). Neijt (1979) argues extensively that the relation between the remnants is subject to such familiar conditions on movement as the wh-island condition (Neijt 1979, 138)

(14) a. John tried to cook dinner today, and Peter ~~tried to cook dinner~~ yesterday
b.*John wondered what to cook today, and Peter ~~wondered what to cook~~ yesterday.

Suppose we take these arguments as convincing, and posit a structure for the second clause of (13) something like that in (15), in which the NPs *others* and *records* have undergone some kind of overt movement out of a constituent containing the verb, which is then elided:

(15)



A number of questions about this movement arise, one of which is why it is not possible when α is not elided:

(16) * Others records bought.

The theory developed here provides us with an answer to this question. The features driving the movements in (15) are weak, and thus cannot ordinarily trigger overt movement. They can, however, trigger movement out of an ellipsis site, since the resulting chains will contain only a single candidate for pronunciation and will thus be well-formed PF objects.

4. An embarrassment of riches

Another difference between the theory developed here and Procrastinate involves chains of the form in (17), which are allowed by Procrastinate but ruled out by this theory:

(17) **[strong] [strong] X**
: 1: 1
z------mz----m

The chain in (17) is not a well-formed PF object; PF has no way of choosing which of the copies in a checking relation with a strong feature to pronounce.

4.1 Subject Extraction

One example of a chain of this type would be overt extraction of a subject which has moved overtly to check a strong feature in the external subject position (cf. the simplified tree in (18)):

(18) XP
4
: X'
1 4
1 X IP
1 g 4
1[strong] I'
z----m: 4
1 I VP
1 g 4
1 [strong] V'
z-----m 4
V

Thus, extraction of subjects should in principle be impossible. In fact, subject extraction is often marked, in ways which follow fairly naturally from the theory developed here.

4.1.1. Immovable subjects

In some cases, subjects cannot be extracted at all. In Quechua, for instance, subjects cannot undergo wh-movement; compare the ill-formed subject extraction in (19a) with the well-formed object extraction in (19b) (Imbabura Quechua, Hermon (1984, 145)):[2]

(19) a. *Pi -taj Maria -ka [t chayamu-shka -ta] kri -n?
who WH Maria TOP arrive NL ACC believe 3.PRES
'Who does Maria believe t has arrived?'
b. Ima -ta -taj Maria -ka [Juzi t miku-shka -ta] kri -n?
what ACC WH Maria TOP José eat NL ACC believe 3.PRES
'What does Maria believe José ate t?'

In this theory, Quechua subjects cannot be extracted because the resulting chain would have two positions associated with strong features, one in the external subject position and

[2] Thanks to Andrew Simpson for pointing out the Quechua data to me.

another in the specifier of CP.[3] PF would thus receive contradictory instructions about which copy in the chain to pronounce.

4.1.2. Anti-agreement

Suppose we consider a language in which the feature triggering movement to the external subject position may be either weak or strong. This theory predicts that in cases of overt subject extraction, the weak feature for attracting the subject to the external position will have to be used. In fact, there is a long literature arguing that in languages in which subjects can be either preverbal or postverbal, wh-extraction of the subject must take place from postverbal position (cf. Rizzi 1982, Jaeggli 1984, Brandi and Cordin 1989, Campos 1997, and references cited there).

One of the clearest pieces of evidence for this comes from languages in which preverbal and postverbal subjects are distinguishable by the agreement they trigger on the verb (Fiorentino, adapted from Brandi and Cordin 1989, 121-122):

(20) a. **La Maria** l' è venuta
the Maria she is come-FEM
'Maria came'
b. Gli è venuto **la Maria**
it is come the Maria
'Maria came'

In such languages, the weak version of the subject-agreement feature must be used when the subject undergoes wh-extraction, as we expect (Fiorentino, Brandi and Cordin 1989, 124-125):

(21) a.* Quante ragazze le sono venute con te?
how-many girls they are come-FEM.PL. with you
'How many girls came with you?'
b. Quante ragazze gli è venuto con te?
how-many girls it is come with you
'How many girls came with you?'

In the well-formed (21b), the subject checks a weak feature in Spec IP and a strong feature in Spec CP; the resulting chain contains only a single copy in a checking relation with a strong feature (namely, the copy in Spec CP), and is therefore a well-formed PF object.

4.1.3. Chain Separation

In some languages, extraction of the subject obligatorily leaves a resumptive pronoun (Yoruba, Carstens 1987, 62):

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[3] In order to extract embedded subjects, Quechua resorts to pied-piping of the entire embedded clause (Imbabura Quechua, Hermon (1984, 152)):

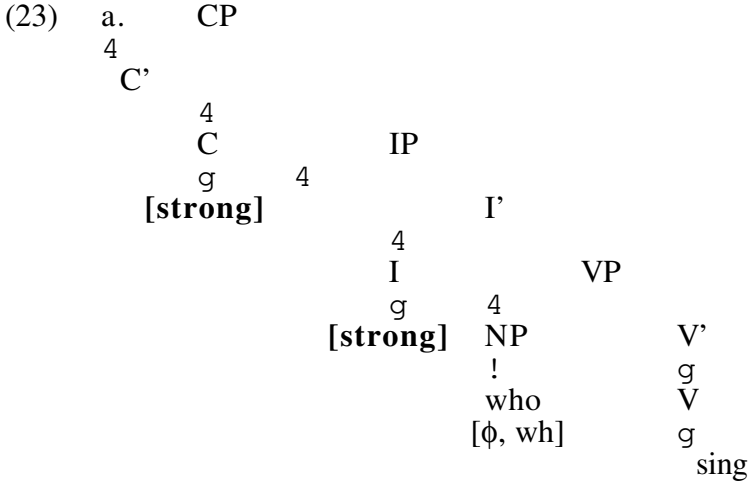
(i) [Pi chayamu-shka -ta -taj] Maria t kri -n?
who arrive NL ACC WH Maria believe 3.PRES

Here we expect the constraints on PF well-formedness to be satisfied; the strong feature associated with the external subject position has an XP containing the feature it checks being pronounced in its specifier (namely, *pi* 'who'), and the strong feature associated with wh-movement also has an XP containing the feature it checks being pronounced in its specifier (namely, the embedded clause of which *pi* 'who' is the subject). The theory proposed here would seem to have interesting consequences for our approaches to pied-piping, which space limitations prevent me from exploring.

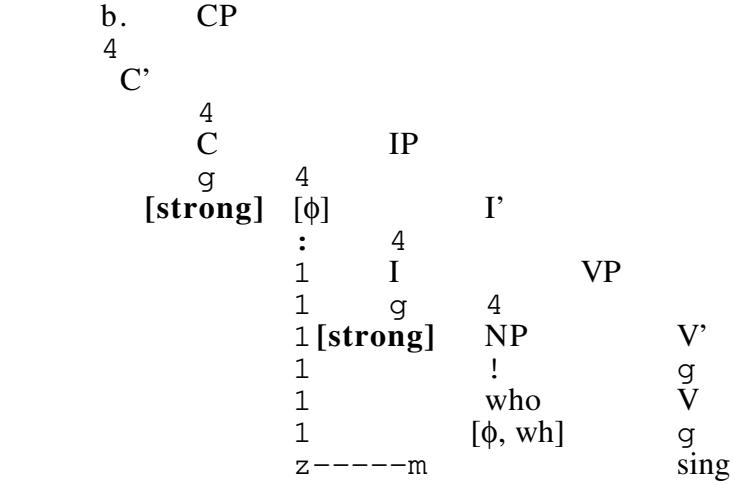
(22) a. Tani *(ó) n ko¢rin
who he ASP sing
'Who is singing?'
b. Kíni Àìná kà
what Aina read
'What did Aina read?'

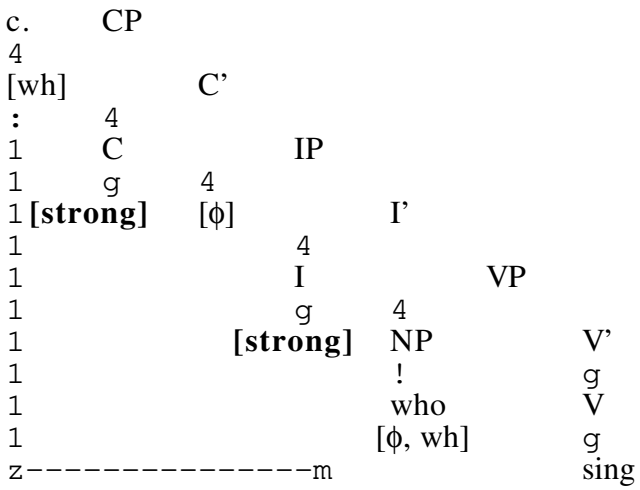
I suggest that the resumptive pronoun strategy indicates division of the formal features of the subject into two independent syntactic objects, each heading its own chain. The derivation of a sentence like (22a) would then be as in (23), with each feature of the subject moving separately to check a distinct strong feature:

(23) a.



b.





Here the subject's ϕ-features and its wh-features have been separated into distinct chains, each subject to interpretation by PF. Each chain is associated with a single strong feature, and each is therefore a well-formed PF object. The chain headed by the feature [wh] is pronounced as the wh-word *tani* 'who', and the chain headed by the ϕ-feature is pronounced as the resumptive pronoun *ó*.

4.1.4. Complementizer-trace interactions

Finally, there is a class of languages in which subject extraction forces the use of a particular form of the complementizer (these include English, French (Rizzi 1990), Norwegian (Taraldsen 1986), and West Flemish (Haegeman 1992)):

(24) Who do you think (*that) t left?

In Richards (1997), I suggested that such languages might be making use of a strategy of chain separation, like that discussed in the preceding section. On this view, the role of the complementizer is to license extraction of a subset of the formal features of the extracted NP. Space considerations prevent me from discussing this issue at any length.

4.2. Improper movement, and proper improper movement

Another case of a chain associated with multiple strong features would be that created by the derivation in (25):

(25) a. are known [$_{CP\ [+wh]}$ [it was told [how many people]]]
b. are known [$_{CP\ [+wh]}$ [how many people] [it was told t]]
c. [how many people] are known [$_{CP\ [+wh]}$ t' [it was told t]]

In (25b), *how many people* moves to check the strong wh-feature on the embedded C^{o}. In (25c), *how many people* undergoes further movement to check another strong feature in the external subject position of the matrix clause. All strong features are checked in the overt syntax, and locality is respected throughout. The resulting representation should be able to mean something like *It is known how many people were told*. This derivation is standardly ruled out by recourse to a ban on Improper Movement, which blocks movement from an

A'-position to an A-position (as in (25c)). We can derive this ban from the theory under development here. The chain created by the derivation in (25) contains two positions associated with strong features (one in the specifier of the embedded CP, and the other in the external subject position of the matrix clause), and is therefore not a well-formed PF object[4].

In the previous section, I discussed a number of ways of improving the status of a chain with two positions associated with strong features. To ensure that the ban on improper movement really follows from this theory, we will need to be certain that none of these can be employed in this case. It seems clear that they cannot. English lacks a weak wh-feature that it could substitute for the strong wh-feature in (25), so nothing parallel to anti-agreement could take place in this case. And the chain separation approach discussed in section 4.1.3, although it presumably would have the desired effect of creating a well-formed PF object, would violate locality. Consider a version of (25) in this kind of derivation is employed:

(26) a. are known [$_{CP\ [+wh]}$ [it was told [how many people]]]
[ϕ] [wh]

b. are known [$_{CP\ [+wh]}$ [wh] [it was told [how many people]]]
: [ϕ] [wh]
z----------m

c.[ϕ] are known [$_{CP\ [+wh]}$ [wh] [it was told [how many people]]]
: [ϕ] [wh]
z----------m

The movement of the ϕ-feature in (26c) is a case of Super-raising, and can be ruled out by Shortest Attract.

One prediction of this approach to improper movement is that in a language with weak wh-features, derivations like those in (25) should be well formed. There is evidence from Japanese that this is the case. Saito (1992) notes that long-distance scrambling and local scrambling typically differ in that only the latter can remedy weak crossover (Japanese, Saito 1992, 115):

(27) a. Dono hon-ni -mo sono tyosya -ga t keti-o tuketa
which book on also its author NOM threw-cold-water
'Every book$_i$, its$_i$ author threw cold water on'

b.?*Dono hon-ni -mo sono tyosya -ga [Hanako -ga t keti-o tuketa to]
which book on also its author NOM Hanako NOM threw-cold-water that
itteiru
is-saying
'Every book$_i$, its$_i$ author says that Hanako threw cold water on'

On the other hand, Saito notes that long-distance scrambling of a wh-word can remedy weak crossover (Japanese, Saito 1992, 108-109):

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[4] We will also want this theory to rule out the chain headed by *how many people* in (i):

(i) [$_{CP\ [+wh]}$ how many people$_i$ [t''$_i$ are known [$_{CP\ [-wh]}$ t'$_i$ that [it was told t$_i$]]]]?

Ruling out (i) will involve postulating a strong feature on the embedded [-wh] C°; that is, we will need to assume that C° in English can have a strong [+wh] feature regardless of whether it is interrogative or declarative. A number of interesting issues then arise; see Richards (1997) for some discussion.

(28) a. ?Dare -o soitu -no hahaoya-ga t aisiteiru no
who ACC guy GEN mother NOM love Q
'Who$_i$, his$_i$ mother loves'
b. ?Dare -o soitu -no hahaoya-ga Hanako -ga t aisiteiru to omotteiru no
who ACC guy GEN mother NOM Hanako NOM love that think Q
'Who$_i$, his$_i$ mother thinks that Hanako loves'

On the account of improper movement developed here, the contrast between long-distance scrambling of a quantifier and long-distance scrambling of a wh-word is unsurprising. The wh-word has the option of stopping in the intermediate Spec CP, a position associated with a weak feature in Japanese; from this position, scrambling into the higher clause can be local, and thus can have the properties of A-movement. A long-distance scrambled quantifier, by hypothesis, lacks such an intermediate landing site.[5]

As we expect on this approach, if the intermediate landing site for the wh-word is not available, the ability of long scrambling to remedy weak crossover vanishes (Japanese, Shigeru Miyagawa, p.c.):

(29) a. ?Dare-o soitu -no okaasan -ga [John -ga t sikatta to] itta no
who ACC guy GEN mother NOM John NOM scolded that said Q
'Who$_i$, his$_i$ mother thinks that John scolded'
b. *Dare-o soitu -no okaasan -ga [John -ga t sikatta ka] siritagatteiru no
who ACC guy GEN mother NOM John NOM scolded Q wonders Q
'Who$_i$, his$_i$ mother wonders whether John scolded'

(29b) is much worse than (29a), and is also worse than an ordinary wh-island violation in Japanese; in fact, it has the status of a weak crossover violation. This is what we expect; in (29b), the intermediate landing site for long-distance wh-movement is unavailable, and improper movement therefore cannot take place.

5. Movement of phonologically null elements

The theory developed here predicts that phonologically null elements will be able to move overtly (that is, before Spell-Out) more freely than phonologically contentful elements. A chain with a phonologically null head is a presumably immune to conditions on PF well-formedness. We should expect, for instance, that a weak feature will be able to attract a phonologically null element in the overt syntax.

One piece of evidence for this conclusion comes from Japanese. Japanese wh-movement is driven by a weak feature:

(32) Taroo -wa nani -o katta no?
Taroo TOP what ACC bought Q
'What did Taroo buy?'

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[5] Saito notes that negative polarity items pattern with wh-words in this regard (Japanese, Saito 1992, 109):

(i) ?Dono hito -mo soitu -no hahaoya -wa [Hanako -ga t aisiteiru to] omottenai
which person also guy GEN mother TOP Hanako NOM love that think-NEG
'Anyone$_i$, his mother does not think that Hanako loves t$_i$'

If the account developed here is on the right track, the well-formedness of (I) must indicate that negative polarity items are licensed by a weak feature in Neg, and can use Spec NegP as an intermediate landing site, just as wh-words use Spec CP as an intermediate landing site. We are also driven to the conclusion that Spec NegP is situated below the highest possible landing site of A-scrambling.

The prediction of this theory is that a null operator should be able to raise overtly to check the weak feature on C^o.[6] Relativization in Japanese arguably involves movement of a null operator:

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      a-------1
      ?              1
(33)  [OP  Taroo  -ga    t yonda] hon
           Taroo NOM    read   book
      'the book Taroo read'
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As a diagnostic for the position of this null operator in the overt syntax, we can use the placement of NPs marked with the emphatic postposition *koso*. NPs marked with *koso* cannot be c-commanded by wh-words in the overt syntax (Japanese, from Tanaka (in preparation)):

(34) a. John-koso nani -o yonda no?
John EMPH what ACC read Q
'What did *John* read?'
b. *Nani-o_i John-koso t_i yonda no?
what ACC John EMPH read Q

(35) a. *Dare-ga LGB-koso yonda no?
who NOM LGB EMPH read Q
'Who read *LGB*?'
b. LGB-$koso_i$ dare-ga t_i yonda no?
LGB EMPH who NOM read Q

NPs marked with *koso* can be contained in complex NPs (Takako Aikawa, Shigeru Miyagawa, p.c.):

(36) a. [John-koso LGB -o yonda to iu] uwasa
John EMPH LGB ACC read that rumor
'the rumor that *John* read LGB'
b. [John-ga LGB -koso yonda to iu] uwasa
John NOM LGB EMPH read that rumor
'the rumor that John read *LGB*'

However, a *koso*-NP cannot occur in a relative clause (Takako Aikawa, Shigeru Miyagawa, p.c.):

(37) a. *[John-koso yonda] hon
John EMPH read book
'the book that *John* read'
b. *[LGB -koso yonda] hito
LGB EMPH read person
'the person that read *LGB*'

The ill-formedness of (37) receives a natural account if we assume that the relative operator in Japanese always undergoes overt movement to Spec CP--that is, to a position c-commanding any *koso*-NP in the relative clause. (37) would then be ill-formed for the same reason that (34b) and (35a) are.

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[6] I assume that the fact that the [+wh] feature on C^o is weak in Japanese indicates that the feature responsible for attracting the relative operator on C^o is weak as well. The validity of this assumption could be questioned.

Moreover, if this line of reasoning is correct, overt movement of the null relative operator in Japanese is not only possible but obligatory. If it were possible for the operator to remain in situ, (37a) at least would be well-formed[7].

6. Conclusions

I have tried to show that Procrastinate can be derived from a condition on well-formedness of PF representations. The leading idea has been that PF requires explicit instructions about which member of a chain to pronounce, and that strong features constitute instructions to PF to pronounce that member of a chain with which they are in a checking relation. We have seen that a number of apparently desirable empirical results can be derived from this theory.

The theory has implications for the architecture of the grammar, as well. We now have a theory in which certain types of overt movements are ruled out. Those movements which are not ruled out (e.g., overt movement to check strong features) appear to be obligatory; that is, we appear to have arrived at a version of Pesetsky's (1989) Earliness:

(38) A feature must be checked as soon as possible after being introduced into the derivation.

(38) will be constrained by the requirement that movements in the overt syntax create well-formed PF objects, and will therefore often fail to force overt movement to check weak features. With the exceptions that we have seen, then, only movement to check strong features will be obligatory. We thus derive the statement in (39) as a corollary of (38):

(39) A strong feature must be checked as soon as possible after being introduced into the derivation.

(39) is the requirement from which Chomsky (1995) derives the effects of Cyclicity. We have now seen that this requirement can itself be derived from an empirically desirable, more general requirement, namely that in (38). The only residue of (38) which (39) does not cover will be overt movement to check weak features, which should be obligatory in all those cases in which it is possible. As we saw in section 5, this appears to be the case.

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[7] Another piece of evidence for the conclusion that phonologically null elements may freely move to check weak features in the overt syntax comes from Chichew$aobject agreement. We came to the conclusion in section 2.2 that Chichew$aobject agreement is associated with a syntactically weak feature, and is therefore only triggered by NPs which will undergo some kind of further movement out of Spec AgrOP to check a strong feature higher in the tree. There is, however, one further class of objects which can trigger object agreement; object agreement may appear when the object is a null pronominal, though not with overt pronominals (Chichew$a, adapted from Bresnan and Mchombo 1987, 769):

(i) a. Fîsi a- ná- **ú**- dy -a
hyena SM-PAST-OM-eat-INDIC
'The hyena ate it'
b. Fîsi a- ná- dy -á i*wo
hyena SM-PAST-eat-INDIC it
'The hyena ate it'

This is what we expect; the null pronominal object in (ia) above is able to move in the overt syntax to check the weak feature on AgrO, since it is immune to constraints on PF well-formedness.

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