

# Remarks and Replies

## Toward a More Complete Typology of Anaphoric Expressions

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Reinhart and Reuland (1993) propose the following typology of anaphoric expressions: SELF anaphors (+SELF, -R), SE anaphors (-SELF, -R), and pronouns (-SELF, +R). We argue that the Greek anaphor *o eaftos tu* 'the self his' exemplifies a fourth type, predicted by Reinhart and Reuland's typology but not instantiated in their system: an "inalienable possession" anaphor (+SELF, +R). Within Reinhart and Reuland's framework such anaphors are allowed provided that (a) they do not enter into chain formation and (b) they satisfy the (reflexivity) binding conditions through abstract incorporation of the nominal head into the predicate they reflexivize. The proposed analysis makes valid predictions concerning the distribution of Greek anaphors as opposed to English/Dutch anaphors.

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### 1 Introduction

Reinhart and Reuland (R&R) (1993; also Reuland and Reinhart 1995) claim that NPs are partitioned into three classes according to the properties  $\pm$ SELF,  $\pm$ R. An NP carrying the semantic

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feature SELF has the ability to make a predicate reflexive.<sup>1</sup> In natural languages SELF is generally (but not necessarily) encoded through a special morpheme—for example, in English *self*, in Dutch *zelf*, in Basque *buru* ‘head’. The property R is defined as in (1).

- (1) An NP is +R iff it carries a full specification for  $\phi$ -features (number, gender, person).

R-expressions and pronouns are generally fully specified for  $\phi$ -features and are thus marked +R. Certain monomorphemic anaphors, termed S(implex) E(xpression) anaphors, like Dutch *zich*, lack full specification for  $\phi$ -features and are thus marked –R. On the basis of these two properties, R&R propose the typology in (2).<sup>2</sup>

(2)	SELF anaphor	SE anaphor	Pronoun/R-expression
Reflexivizing function	+	–	–
R(eferential independence)	–	–	+

R&R thus suggest that there are two types of anaphors in natural languages, a +SELF, –R anaphor like English *himself* and a –SELF, –R anaphor like Dutch *zich*. Furthermore, they argue that the difference in  $\phi$ -feature specification is responsible for the fact that SE anaphors are referentially dependent whereas pronouns are referentially independent, and, generalizing, they propose that the semantic property *referential (in)dependence* is always encoded in the computational system through the morphological property  $\pm R$ .

In (2) the +SELF, +R combination is missing. Although R&R do not discuss this gap, they assume that +SELF, +R elements do not exist. However, given that the properties SELF and R are defined independently of one another, specification of an expression as +SELF does not, in itself, guarantee that it will qualify as –R and vice versa. In this article we present evidence from Greek that +SELF, +R expressions exist. Just as –SELF elements can be specified as +R or –R, so can +SELF elements. We propose that +SELF, +R elements may qualify as reflexivizers when they have the appropriate internal structure; otherwise, they can be licensed only as logophors. The implication of this discussion is that the notion of referential (in)dependence finds no straightforward definition in terms of R&R’s feature specification.

<sup>1</sup> There are cases where this ability is not executed, when SELF elements do not occupy an argument position of a syntactic predicate. In those cases they are used logophorically (R&R 1993:671–672). For R&R, logophoricity means that such elements are not subject to the normal locality restrictions imposed by binding theory; rather, their distribution is governed by discourse conditions such as ‘point of view.’

<sup>2</sup> Pronouns and R-expressions are grouped together because they display identical behavior with respect to reflexivization. Of course, they differ with respect to operator-variable binding and coreference (see Grodzinsky and Reinhart 1993 for discussion).

## 2 Background

In R&R 1993 binding is not directly about the relative distribution of anaphors and pronominals but about well-formedness conditions on the licensing and interpretation of reflexive predicates.<sup>3</sup> They formulate the following two conditions on such predicates:

- (3) a. *Reflexivity Condition A*  
A reflexive-marked syntactic predicate is reflexive.  
b. *Reflexivity Condition B*  
A reflexive semantic predicate is reflexive-marked.

*Reflexive marking* and *reflexive predicate* are defined in (4) (R&R 1993:678).

- (4) a. A predicate (formed of P) is reflexive-marked iff either P is lexically reflexive or one of P's arguments is a SELF anaphor.  
b. A predicate is reflexive iff two of its arguments are coindexed.

Unlike proponents of binding theory as formulated in the principles-and-parameters framework (Chomsky and Lasnik 1993), R&R do not attribute the configurational effects of anaphora to the binding conditions themselves but to the Chain Condition (R&R 1993:696).

- (5) A maximal A-chain ( $\alpha_1, \dots, \alpha_n$ ) contains exactly one link— $\alpha_1$ —that is both +R and Case-marked.

Crucially, R&R's concept of an A-chain differs from the standard concept. To be able to generalize over NP-movement chains and anaphora chains (see (6)), R&R give up the thematic requirement on A-chains, capitalizing on  $\phi$ -feature specification instead. The intuition behind this reformulation is that elements entering a chain must form one *syntactic* argument, not one *semantic* argument, thus allowing chain formation in cases like (6b) and (7).

- (6) a. Jan<sub>i</sub> werd e<sub>i</sub> gehaat.  
Jan was hated  
b. Jan<sub>i</sub> heeft zich<sub>i</sub> vergist.  
Jan has SE erred  
'Jan is mistaken.'  
(7) a. Jan<sub>i</sub> hoorde [zich<sub>i</sub> zingen].  
Jan heard SE sing  
'Jan heard himself sing.'  
b. John<sub>i</sub> heard [himself<sub>i</sub> sing].

<sup>3</sup> The distinction between syntactic and semantic predicates is crucial for the distribution of anaphors and pronouns in cases where the two do not coincide, such as exceptional-Case-marking constructions, coordination, and PPs (R&R 1993:sec. 4). For the points we want to make, however, this distinction is not crucial.

R&R (1993:702) claim that the Chain Condition (5) does not apply to singleton A-chains. This stipulation is needed to explain the grammaticality of (8).

(8) Max<sub>i</sub> was afraid that Mary would hate no one but himself<sub>i</sub>.

In (8) *himself* does not reflexive-mark *hate* since it is not a syntactic argument of *hate*, thus allowing a logophoric reading. In such cases the reflexive *himself* forms a singleton chain and such chains would violate the Chain Condition because the chain would be headed by a –R element. We will not follow R&R in this. Instead, we will assume with Fox (1993) that the only restriction on the application of the Chain Condition is (9).<sup>4</sup>

(9) A-chains are restricted to argument positions of syntactic predicates.

As a result of (9), logophorically used reflexives (see (8)) will not be subject to the Chain Condition. The proposed change entails that –R-marked elements in an argument position of a syntactic predicate will be forced to undergo chain formation in order to conform with the Chain Condition. This fits the intuition underlying R&R's formulation of a chain that in order for an element to qualify as a syntactic argument, it must be fully specified for  $\phi$ -features and Case features.

To see the effects of the binding conditions and the Chain Condition, consider the pair of sentences in (10).

- (10) a. Jan<sub>i</sub> bevalt zichzelf<sub>i</sub>.  
 Jan pleases SE self  
 'Jan pleases himself.'  
 b. \*Zichzelf<sub>i</sub> bevalt Jan<sub>i</sub>.  
 SE self pleases Jan  
 'Himself pleases Jan.'

Both structures are well formed in terms of binding. In (10a) and (10b) the object and the subject, respectively, contain a +SELF anaphor; thus, the predicates are reflexive-marked in both cases. Since the two arguments are coindexed, making the predicate reflexive, (10a) and (10b) equally satisfy Reflexivity Conditions A and B. However, they differ with respect to chain formation. In (10b) the head of the chain is –R, violating the Chain Condition. This means that the ban on nominative anaphors is attributed to chain formation (cf. Anagnostopoulou and Everaert 1995).

### 3 +SELF, +R Elements in Reinhart and Reuland 1993

In R&R 1993 the effect of  $\pm$ SELF marking is regulated by the binding conditions, whereas  $\pm$ R specification is relevant to chain formation. In the typology in (2) NPs are classified with respect to these properties. As noted earlier, the typology in (2) predicts a fourth class, instantiating the

<sup>4</sup> A possible alternative to this stipulation is to assume that the English reflexive when used as a logophor has the properties of Dutch *hemzelf* 'him self'; that is, it is specified as +SELF, +R (see below in the text). This formulation would have the advantage of accounting for the fact that Dutch *zichzelf* does not admit logophoric uses, contrary to *hemzelf* and *himself*.

+SELF, +R combination, which is missing. Let us make explicit why there might be such a gap.

R&R adopt a definition of anaphors rooted in Chomsky 1986 and Keenan 1988, according to which anaphors are referentially defective NPs, and they claim that the  $\pm R$  property stands for referential (in)dependence. If being an anaphor means that an NP is referentially dependent, and if referentially dependent NPs are specified as  $-R$ , then an anaphor cannot be  $+R$ . Under this reasoning, the gap in (2) could follow for free if one assumed that only referentially dependent NPs (anaphors) can be classified as +SELF elements. However, nothing in R&R's feature specification excludes  $+R$  NPs that are nevertheless able to reflexivize the predicate.

But there is a theory-internal reason for the gap in (2). It follows from R&R's system, in particular from the interaction between R&R's Reflexivity Conditions A and B and their Chain Condition. A predicate taking a +SELF argument is reflexive-marked; therefore, two of its arguments must be coindexed (see (4b)). This will inevitably lead to chain formation. The  $+R$  property of the foot of the chain, on the other hand, will cause a violation of the Chain Condition, leading to a contradiction.<sup>5</sup> This means that the nonexistence of +SELF,  $+R$  elements seems to follow as a *theorem* from R&R's system. Nevertheless, there are other logical possibilities: (a) +SELF,  $+R$  anaphors could exist, provided that they do not enter into chain formation, and (b) +SELF,  $+R$  anaphors could exist when there is no chain formation and no reflexive marking. In the rest of this section we will focus on (a), returning to (b) in section 4.

### 3.1 The Greek Anaphor *o eaftos tu*

An ideal candidate for a reflexivizer in the sense described above is the Greek *o eaftos tu*, which consists of the definite determiner *o* 'the', the head noun *eaftos* 'self', and the possessive pronoun *tu* 'his'. Iatridou (1988) argues that *o eaftos tu* is, technically speaking, not an anaphor; only the possessor within the NP is coindexed with the antecedent.

- (11) [O Petros]<sub>j</sub> agapai [ton eaf<sub>t</sub>o<sub>i</sub> tu]<sub>j</sub>.  
 the Petros(N) loves the self(A) his(G)  
 'Petros loves himself.'

Note that only in the context of *eaftos* does the pronominal possessor acquire anaphoric properties (cf. Iatridou 1988).

Iatridou's arguments for the indexing in (11) are placed within the principles-and-parameters binding framework. She bases them on the observation that the features of the anaphor do not vary with the features of the subject, though those of the possessive pronoun do. Moreover, she points out that the object *ton eaf<sub>t</sub>o<sub>i</sub> tu* can be doubled by a pronominal clitic as in (12). When

<sup>5</sup> An *LI* reviewer suggests that the effect of the Chain Condition could also be derived by assuming that referentially dependent elements are not allowed to head a chain, irrespective of whether they are  $+R$  or  $-R$ . We believe that the facts discussed in this article show that R&R's formulation of the Chain Condition in terms of the  $\pm R$  property is correct. Later in the text (cf. (10b) and (26)) we show that there is a difference in the behavior of referentially dependent elements that follows from their  $\pm R$  specification.

standing alone, pronominal clitics behave like pronouns in the sense that they are subject to Condition B, as shown in (13).

- (12) [O Petros]<sub>j</sub> ton<sub>i</sub> agapai [ton eafto<sub>i</sub> tu]<sub>j</sub>.  
 the Petros(N) CL(A) loves the self(A) his(G)  
 ‘Petros loves himself.’
- (13) [O Petros]<sub>j</sub> ton<sub>i/\*j</sub> agapai.  
 the Petros(N) CL(A) loves  
 ‘Petros loves him.’

Under the straightforward assumption that the clitic and the doubled NP in (12) are coindexed, the NP cannot be an anaphor in the principles-and-parameters sense. The clitic will be subject to Condition B and, at the same time, the anaphor will be subject to Condition A, resulting in a contradiction. If, on the other hand, *ton eafto tu* is an NP, then the possessor will be coindexed with the subject and this index will be prevented from percolating up to the NP by the *i*-within-*i* Condition.<sup>6</sup> Evidence in favor of this line of argument comes from the observation that in other clitic-doubling languages—for example, Spanish—true anaphors are doubled by reflexive clitics, not by pronominal clitics.

- (14) a. Fernando<sub>i</sub> se<sub>i</sub> lava [a si mismo]<sub>i</sub>.  
 Fernando CL-REFL washes a himself
- b. \*Fernando<sub>i</sub> lo<sub>i</sub> lava [a si mismo]<sub>i</sub>.  
 Fernando CL-PRON washes a himself

Despite the fact that *o eaftos tu* has the form of an R-expression, it patterns with reflexivizers like English *himself* in all relevant respects: the usual c-command requirement holds (15a); the anaphor must be locally bound (15b); it is subject to the Specified Subject Condition and cannot undergo long-distance binding (even across a subjunctive as in (15b)); it is not subject-oriented (15c).

- (15) a. \*I mitera tu Janni<sub>i</sub> agapai ton eafto tu<sub>i</sub>.  
 the mother(N) the Jannis(G) loves the self(A) his(G)  
 ‘Jannis’s mother loves himself.’
- b. \*O Jannis<sub>i</sub> theli na figi o eaftos tu<sub>i</sub>.  
 the Jannis(N) wants SUBJ goes the self(N) his(G)  
 ‘Jannis wants that himself goes away.’

<sup>6</sup> Strictly speaking, within R&R’s framework we cannot apply Iatridou’s reasoning. Crucially, within R&R 1993 the pronominal clitic does not violate Reflexivity Condition B when it is linked to a SELF element. Assigning the same indices to the subject and the clitic would yield a reflexive predicate that must also be reflexive-marked; and it is, owing to the presence of the doubled SELF element. However, the subject cannot be assumed to be coindexed with the pronominal clitic for a different reason, namely, chain formation. Given that the clitic is fully specified for  $\phi$ -features, it must be +R. Thus, coindexation of the clitic with the subject would lead to a chain that has two +R links, violating the Chain Condition. The only way to circumvent such a violation is to ensure that *ton eafto tu* and the subject have different indices.

- c. O Jannis edhikse s-tin Maria<sub>i</sub> ton eafto tis<sub>i</sub>.  
 the Jannis(N) showed to-the Maria the self(A) her(G)  
 ‘Jannis showed to Maria herself.’

Most importantly, *o eaftos tu* should fall under Reflexivity Condition A since whenever this element is an argument of a syntactic predicate, that predicate must be reflexive.

- (16) \*O Jannis<sub>i</sub> den anexete [ta pedhia tu eaftu tu<sub>i</sub>].  
 the Jannis(N) not tolerates the children(A) the self(G) his(G)  
 ‘Jannis does not tolerate the children of himself.’

In (16) the possessor qualifies as an external argument for the NP, which therefore defines a syntactic predicate (R&R 1993:681–683). This predicate is reflexive-marked but not reflexive, in violation of Reflexivity Condition A, rightly predicting the sentence’s ungrammaticality.<sup>7</sup> Thus, in terms of R&R’s typology, the NP *o eaftos tu* as a whole should clearly qualify as +SELF.

The next step is to show that *o eaftos tu* is +R. One crucial piece of evidence comes from clitic doubling. As discussed above, the Greek anaphor, unlike Spanish anaphors, may undergo clitic doubling by pronominal clitics, like any other definite NP. Pronominal clitics qualify as +R elements: they are fully specified for  $\phi$ -features, as reflected in the fact that they are subject to Condition B when they occur on their own. Hence, their associated NPs must also be +R given Suñer’s (1988) matching requirement on clitic doubling, according to which the clitic and its associate must agree in features.

Moreover, *eaftos* as the head of *o eaftos tu* meets the criterion of +R elements as it is discussed in R&R 1993, and especially in R&R 1995—namely, full  $\phi$ -feature specification. To illustrate this point: Note first of all that *eaftos* allows a so-called reified substantive reading (Safir 1996), preferably when the noun is modified, as in (17).

- (17) O Jannis kseri mono ton kalo eafto tis Marias.  
 the Jannis(N) knows only the good self(A) the Maria(G)  
 ‘Jannis only knows Maria’s good self.’

This means that *eaftos* qualifies as a noun, not as a pronoun. To determine whether a nonpronominal element like *eaftos* is specified as +R, we have to show that it is fully specified for the

<sup>7</sup> Iatridou (1988) suggests that the reflexive-like behavior of *o eaftos tu* forces the conclusion that either (a) referential dependency should not be encoded through indexation, or (b) the possessive pronoun in the context of the noun *eaftos* acquires anaphoric properties because a [+proximate] feature is associated with it. We believe that there are arguments against postulating such a feature. First, Iatridou uses the proximate feature in the sense proposed by Jeanne (1978) (cf. Hale 1989). In this view proximate/obviative marking is generalized for all categories within the X-bar system, at least for Hopi. To our knowledge Greek offers no evidence for the proximate/obviative distinction outside the construction mentioned. Second, Hale (1989) argues that this distinction is generally morphologically marked. For that reason he assumes that it is located in a subset of the functional categories. The case of Greek *o eaftos tu* seems to be an exception to that assumption. Third, it is not clear to us how, for instance, the ungrammaticality of (16) is derived from a proximate analysis. Under the assumption that the NP in (16) is a complete functional complex (Chomsky 1986), because a possessor/subject is present, the sentence’s ungrammaticality could be accounted for in terms of a violation of Condition A.

relevant  $\phi$ -features.<sup>8</sup> For Greek nouns number, gender, and Case are relevant.<sup>9</sup> And indeed, the head noun *eaftos* is fully specified for those.<sup>10</sup> Following R&R (1995; see footnote 8), *eaftos* will be marked as  $\{[_{\text{GENDER}} + \text{masc}, - \text{fem}, - \text{neut}], [_{\text{CASE}} - \text{nom}, - \text{gen}/\text{dat}, + \text{acc}], [_{\text{NUMBER}} + \text{sg}, - \text{pl}]\}$ , thus qualifying as +R.

### 3.2 Incorporation in Reinhart and Reuland 1993

We have concluded that the Greek anaphor *o eaftos tu* should be classified as +SELF, +R, instantiating the missing category in (2). Recall that such anaphors can exist only if they do not undergo chain formation. In (11), repeated here, the subject *o Petros* and the object *ton eafto tu* do not form a chain because they are not coindexed.

<sup>8</sup>In R&R 1995 feature specification is interpreted as follows.  $\phi$ -features are grouped into classes, including person, number, gender, and Case. For a given class, an element's specification is a set of values for features in that class. For instance, "3rd person" is represented as  $[_{\text{PERSON}} - 1\text{st}, - 2\text{nd}, + 3\text{rd}]$ , and "masculine" is represented as  $[_{\text{GENDER}} - \text{fem}, - \text{neut}, + \text{masc}]$ . An element is said to be  $\phi$ -feature-deficient if it lacks contrasts in feature specification. R&R define  $\phi$ -feature specification as in (i).

- (i) An element E is specified for a class  $\Phi = \{F_1, \dots, F_n\}$  iff  $\Phi$  contains features  $F_i$  and  $F_j$ ,  $1 \leq i \leq n$ ,  $1 < j < n$ ,  $j \neq i$ , such that E is  $[\alpha F_i]$  and  $[-\alpha F_j]$ .

<sup>9</sup> Person features might not be defined for the category N. Nouns are never specified for 1st or 2nd person, at least in Greek and other languages we know of (cf. Beard 1995:136).

<sup>10</sup> Like every noun in Greek, *eaftos* is marked for gender (i.e., masculine). Moreover, *eaftos* can be fully inflected for both number and Case.

	<i>Singular</i>	<i>Plural</i>
N	<i>o eaftos mu</i> 'the self my'	<i>i eafti mu</i> 'the selves my'
G/D	<i>tu eaftu mu</i> 'the self my'	<i>ton eafton mu</i> 'the selves my'
A	<i>ton eafto mu</i> 'the self my'	<i>tus eaftus mu</i> 'the selves my'

Note that only as a reified substantive noun does *eaftos* allow for plural morphology. In the anaphora cases *eaftos* must be singular (iia). In this respect it behaves exactly like externally bound inalienable nouns (iib); for discussion, see Vergnaud and Zubizarreta 1992.

- (ii) a. I *ginekes frontizoun ton eafto tus/ ?\*tus eaftus tus.*  
 the women(N,PL) take-care the self(A,SG) theirs(SG) the selves(A,PL) theirs(SG)  
 'Women take care of themselves.'
- b. O *jatros tus aktinografise to stomachi/ ?\*ta stomachia.*  
 the doctor to-them(D,PL) X-rayed the stomach(A,SG) the stomachs(A,PL)  
 'The doctor X-rayed their stomachs.'

In section 3.2 we will show that this similarity is not accidental. The Greek anaphor has several other properties in common with inalienable possession nouns.

A reviewer suggests, alternatively, that the Greek anaphor could be argued to be -R because it is specified as masculine, singular, 3rd person, thus being a prime candidate for default feature specification. This line of argumentation would mean that default feature specification implies lack of specification in R&R's sense, as Philip and Coopmans (1996) suggest. However, Greek gives evidence that neuter and not masculine is the default (as in many other languages): when a pronoun refers back to a clause (which has no  $\phi$ -features), it shows up as neuter (Iatridou and Embick 1997).

- (iii) An *erthi o Jannis, afto tha stenoxorisi tin Maria.*  
 if comes the Jannis this(NEUT,SG,3) FUT make-sad the Maria(A)  
 'If Jannis comes, this will make Maria sad.'

Moreover, under such a view, the fact that the Greek anaphor and inalienable possession nouns both must be singular in cases of anaphora would be accidental.

- (11) [O Petros]<sub>j</sub> agapai [ton eafto<sub>i</sub> tu]<sub>j</sub>.  
 the Petros(N) loves the self(A) his(G)  
 'Petros loves himself.'

The two arguments that are coindexed do not form a chain either since we cannot assume chain formation between arguments of verbs and possessors inside the DPs; were we to do so, we would incorrectly predict examples like *John<sub>i</sub> lost his<sub>i</sub> car* to be ungrammatical.

With respect to binding, the predicate in (11) is reflexive-marked since one of its arguments is a SELF anaphor. This means that two arguments of the predicate should be coindexed to satisfy Reflexivity Condition A.<sup>11</sup> This is not the case, however, since the two elements that are coindexed in (11) are, structurally, arguments of different predicates. We are thus confronted with a problem similar to the one that exceptional-Case-marking constructions pose for R&R (1991), who consider reflexivization as an operation on  $\theta$ -grids. In R&R 1991 the SELF anaphor in (18a) reflexive-marks through SELF-movement to the matrix predicate, which is, however, not reflexive since the embedded subject is not part of its  $\theta$ -grid. To solve the problem, R&R (1991) propose complex predicate formation (see (18b)), which is achieved through abstract V-incorporation.

- (18) a. Max<sub>k</sub> heard [himself<sub>k</sub> criticize Lucie].  
 b. Max [criticize<sub>i</sub>-heard]<sub>j</sub> [himself e<sub>i</sub> Lucie]

They argue that after V-incorporation the embedded subject *himself* becomes an argument of the complex predicate *criticize-heard*. We propose that in (11) another type of complex predicate formation applies, one in which the noun and the verb are composed. This is possible because *eaftos* is a defective noun, and such nouns can be assumed to be licensed by abstract incorporation (Safir 1995, Delfitto and D'Hulst 1995).<sup>12</sup>

- (19) [o Jannis]<sub>i</sub> eafto<sub>j</sub>-agapai [ton t<sub>j</sub> tu]<sub>i</sub>

<sup>11</sup> Fox (1993) observes that there is evidence that Reflexivity Condition A as it is formulated in (3a) cannot account for examples like (i).

(i) \*Max<sub>i</sub> showed myself<sub>j</sub> to him<sub>i</sub>.

In (i) *myself* would reflexive-mark the predicate, thus wrongly licensing the coindexation of *Max* and *him*. It is for this reason that R&R claim that the definitions in (4) should actually be relativized to an index (1993:662–663). Strictly speaking, our analysis would be incompatible with R&R's relativized definitions. In (11) the predicate is i-reflexive-marked but j-reflexive. We could simply solve this technical problem by assuming that *eaftos* itself has no index or that it has the same index as its specifier (under specifier-head agreement) because of its semantic defectiveness. However, the question is how much evidence there is for relativizing the notions 'reflexive' and 'reflexive-marked.' In R&R's framework, there is a clear division of labor between the reflexivity conditions and the Chain Condition. The former are conditions on predicates; the latter is a configurational restriction on chain dependencies. As Fox (1993) rightly points out, relativization to an index weakens this distinction since the reflexivity conditions now refer not only to predicates but also to their arguments. The effect of allowing the Chain Condition to apply to singleton chains (see (9)) is that (i) will be excluded without the need to relativize the reflexivity conditions.

<sup>12</sup> The fact that semantic defectiveness plays a role in triggering incorporation-like phenomena is in line with Keyser and Roeper's (1992) observation that particles and idiomatic nouns/adjectives move to an abstract clitic position.

As a result, the verb-noun complex counts as one *syntactic* and *semantic* predicate, having the effect that the NP-internal possessor and the subject become coarguments. In other words, the possessor is ‘‘promoted,’’ as a result of which the NP inherits the index of the possessor.<sup>13</sup>

This analysis is supported by examples like the following:

- (20) a. *O Jannis akouse ton eafto tu na kritikari ton eafto tu.*  
 the Jannis(N) heard [the self his](A) to criticize [the self his](A)  
 ‘Jannis heard himself criticize himself.’
- b. *O Jannis<sub>i</sub> akouse [ton eafto<sub>i</sub> tu<sub>i</sub>]<sub>i</sub> na kritikari [ton eafto<sub>q</sub> tu<sub>i</sub>]<sub>q</sub>.*
- c. *O Jannis<sub>i</sub> akouse [ton eafto<sub>k</sub> tu<sub>i</sub>]<sub>k</sub> na kritikari [ton eafto<sub>q</sub> tu<sub>i</sub>]<sub>q</sub>.*
- d. \**O Jannis<sub>i</sub> akouse [tin Maria]<sub>k</sub> na kritikari [ton eafto<sub>q</sub> tu<sub>i</sub>]<sub>q</sub>.*  
 the Jannis(N) heard the Maria(A) to criticize [the self his](A)
- e. *O Jannis<sub>i</sub> akouse [ton eafto<sub>k</sub> tu<sub>i</sub>]<sub>k</sub> na kritikari [ton eafto<sub>q</sub> tu<sub>k</sub>]<sub>q</sub>.*

In (20a) the reflexive in the embedded subject position is bound by the matrix subject. The reflexive in the embedded object position must be bound by the embedded subject, itself a reflexive, and indirectly by the matrix subject since *ton eafto tu* cannot be bound directly by the matrix subject. If, at the relevant level, Iatridou’s (1988) indexing is maintained, then there is no straightforward way to express this.<sup>14</sup> The second instance of the possessive pronoun *tu* could only be coindexed with the matrix subject, if the embedded subject had the index *i*. But the first instance of *tu* also needs that index, thus creating an *i*-within-*i* Condition violation (see (20b)). Alternatively, one might assume the indexing in (20c), but then the prediction would be that (20d) is also grammatical. So, the conclusion is that the only indexing possible is the one in (20e), which in no way reflects the desired reading. On the other hand, under our analysis (20a) has the LF structure (21), correctly capturing its interpretation.<sup>15</sup>

- (21) *o Jannis<sub>i</sub> eafto<sub>k</sub>-akouse [ton t<sub>k</sub> tu<sub>i</sub>]<sub>i</sub> na eafto<sub>q</sub>-kritikari [ton t<sub>q</sub> tu<sub>i</sub>]<sub>i</sub>*

Noun incorporation languages provide evidence that possessors may become arguments of the verb as a result of N-to-V movement (cf. Baker 1988). Consider the Mohawk examples in (22) (from Baker 1988, an anonymous reviewer, and Mark Baker, personal communication).

<sup>13</sup> The position we take on this point is, in effect, reminiscent of Pesetsky’s (1985) analysis in which LF movement of the head of a morphological word leaves behind a trace that is ‘‘invisible’’ for percolation conventions.

<sup>14</sup> A reviewer suggests that contraindexed NPs can refer accidentally to the same entity (Reinhart 1983), and, therefore, the grammaticality of the example could be accommodated in Iatridou’s analysis.

<sup>15</sup> A reviewer points out that the reindexing proposed in the text might force us to assume that the clitic is also re-indexed since clitics and doubled NPs are supposed to share the same indices.

(i) *[o Jannis]<sub>i</sub> ton<sub>i</sub> eafto<sub>j</sub>-agapai [ton t<sub>j</sub> tu<sub>i</sub>]<sub>i</sub>*

In R&R’s (1993) framework this reindexing is not a problem, either for binding-theoretic reasons (see footnote 6) or for chain formation (see section 3.3.1). Note that the postulated movement is covert, hence has no consequences for the morphological matching requirement between the clitic and the NP, which is sensitive only to pre-Spell-Out syntactic structure.

- (22) a. *Ka-rakv ne sawatis rao-nuhs-a'*.  
 3<sub>N</sub>-white *ne* Sawatis 3<sub>M</sub>-house-SUF  
 white (is) Sawatis's house  
 'Sawatis's house is white.'  
 b. *Ro-nuhs-a-rakv ne sawatis*.  
 3<sub>M</sub>-house-white *ne* Sawatis  
 house<sub>i</sub>-white (is) Sawatis's e<sub>i</sub>  
 'Sawatis's house is white.'

(22a) shows that, without noun incorporation, the verb displays agreement with the noun *nuhs* 'house', which is neuter. This agreement pattern does not change when noun incorporation takes place, unless the possessor is left behind as the result of incorporation, in which case agreement between the verb and the possessor is triggered (*possessor raising*; see (22b)), which is masculine in this particular example. This is straightforward evidence that, syntactically, the possessor becomes an argument of the verb.<sup>16</sup> The possessor-raising phenomenon is very productive in the case of inalienably possessed body parts. These cases exhibit a clear reflexivization effect, which is illustrated in the Mohawk examples in (23). (23a) shows that the subject and the possessor within the object NP may corefer. In the case of noun incorporation, however, coreference is blocked; see (23b).<sup>17</sup>

- (23) a. *V-ha-nohare-' ra-kuhs-ake*.  
 FUT-M.SG.SUBJ-wash-PUNC M.SG.SUBJ-face-LOC  
 (he) wash (his) face  
 'He will wash his (own or someone else's) face.'  
 b. *V-ho-kuhs-ohare-'*.  
 FUT-M.SG.SUBJ/M.SG.OBJ-face-wash-PUNC  
 (he) self-face<sub>i</sub>-wash (his own) e<sub>i</sub>  
 'He will wash his (someone else's) face. (lit. He will face-wash him.)'

We assume that this is due to the fact that noun incorporation creates a complex semantic predicate that is reflexive but not reflexive-marked, in violation of Reflexivity Condition B. Indeed, as soon as a reflexive marker is added, as in (24), the sentence becomes grammatical.

- (24) *V-h-at-kuhs-ohare-'*.  
 FUT-M.SG.SUBJ-REFL-face-wash-PUNC  
 (he) self-face<sub>i</sub>-wash (his own) e<sub>i</sub>  
 'He will wash his own face. (lit. He will self-face-wash.)'

What these languages do in two steps—(a) possessor raising as a result of incorporation and

<sup>16</sup> A reviewer points out that Mohawk examples like (22b) are grammatical if and only if the verb is a stative unaccusative or if the incorporated noun is a body part. Other languages seem to have possessor raising to a larger extent (see the discussion in Baker 1996:339–348).

<sup>17</sup> This observation and the examples in (23) were suggested to us by an *LI* reviewer.

(b) reflexive marking of the predicate—Greek does in one step. *Eaftos* incorporates, triggering a possessor-raising effect; it also reflexive-marks the predicate, forcing coreference between an argument of the verb and the possessor. This suggests that *eaftos* has the nature of an inalienable noun but, crucially, it differs from other such nouns in being a reflexive marker.

Our analysis straightforwardly extends to inalienable possession anaphora (25a) and idioms (25b) (cf. Helke 1979).

- (25) a. John<sub>i</sub> bumped his<sub>i</sub>/\*her<sub>j</sub> head.  
 b. John<sub>i</sub> lost his<sub>i</sub>/\*her<sub>j</sub> way.

In these cases noun incorporation is triggered by the semantic defectiveness of the noun (see footnote 12). As a result of incorporation, possessor raising is triggered, yielding a reflexive predicate. In English the predicate cannot be reflexive-marked as in Mohawk, but still reflexivity is licensed in examples like (25a–b). In R&R's (1993) framework, the only way to account for this is to assume that these examples are instances of *inherent reflexivity*; that is, they are marked in the lexicon as reflexive. This correctly captures the fact that such examples are *lexically restricted* (cf. Delfitto and D'Hulst 1995).

Note that under our analysis of *o eaftos tu*, Greek becomes, in a sense, similar to languages exhibiting a “third type of reflexive marking,” as Lidz (1995) puts it. He observes that in Kannada reflexive marking is established by adding a reflexive affix to the verbal predicate. Reflexive marking of the predicate by means of a SELF morpheme attached directly to the predicate and not to one of its arguments can thus be done overtly (Kannada) or covertly (Greek). Thus, the Greek data provide further evidence that Reflexivity Condition A is a condition on predicates and not on arguments.

### 3.3 Predictions

**3.3.1 Nominative Anaphors** Recall R&R's (1993) central claim that the configurational effects of binding are regulated by the Chain Condition. This makes the straightforward prediction that +SELF, +R elements like *o eaftos tu* will not display the usual configurational effects; for instance, nominative anaphors should exist. Example (26) shows that this prediction is borne out.<sup>18</sup>

- (26) O eaftos tu<sub>i</sub> tu aresi tu Petru<sub>i</sub>.  
 [the self his]<sub>(N)</sub> CL(D) likes the Petros(D)  
 ‘Himself pleases/appeals to Petros.’
- (10b) \*Zichzelf<sub>i</sub> bevalt Jan<sub>i</sub>.  
 SE self pleases Jan  
 ‘Himself pleases Jan.’

<sup>18</sup> Elsewhere (Anagnostopoulou and Everaert 1995) we point out that within classical binding theory the contrast between (26) and (10b) could be accounted for by adopting Iatridou's (1988) indexing for *o eaftos tu* and Belletti and Rizzi's (1988) explanation for the ungrammaticality of (10b) in terms of a Condition C violation. However, as we discuss in the work cited, this line of explanation faces conceptual problems.

We assume that the Chain Condition is a condition on overt syntax.<sup>19</sup> In (26), unlike in its Dutch counterpart (10b), chain formation does not apply; therefore, unlike (10b), (26) is well formed. The predicates are reflexive-marked by the SELF anaphor in subject position. Noun incorporation makes the predicate reflexive, and Reflexivity Conditions A and B are satisfied. The different structures in (27) make clear why there is an asymmetry between the Greek and the Dutch anaphors.<sup>20</sup>

- (27) a. [<sub>DP</sub>[<sub>D'</sub>[<sub>D</sub> zich] [<sub>NP</sub>[<sub>N</sub> zelf]]]]  
 b. [<sub>DP</sub>[<sub>D'</sub>[<sub>D</sub> o] [<sub>FP</sub>[<sub>F'</sub>[<sub>F</sub> eaftos]<sub>i</sub>] [<sub>NP</sub>[<sub>Spec</sub> tu] [<sub>N'</sub>[<sub>N</sub> e<sub>i</sub>]]]]]]]]

In the case of *o eaftos tu*, the index of the pronominal does not percolate up to DP; instead, the nominal head *eaftos* determines the indexing. If we follow R&R, the structure of the Dutch anaphor *zichzelf* crucially differs. They analyze the pronominal as a DP head and the SELF morpheme as the head of the NP. The DP will inherit its index either from *zich* alone or from both the  $D^0$  *zich* and the  $N^0$  *zelf* (we will return to this issue in section 3.4). Hence, the two DPs in (10b) will be coindexed, leading to a chain violation.

Baker (1988) claims that overt noun incorporation of subjects is not allowed, with one exception: subjects of unaccusatives.<sup>21</sup> We expect a similar restriction to hold for abstract noun incorporation. Our analysis correctly predicts that the Greek nominative anaphor is licensed solely in derived subject positions. Compare the unaccusative psych verb construction in (26) with the transitive construction in (28) (see Anagnostopoulou and Everaert 1995 for discussion).<sup>22</sup>

- (28) \* O eaftos tu<sub>i</sub> ton antipathi ton Petro<sub>i</sub>.  
 [the self his](N) CL(A) dislikes the Petros(A)  
 'Himself dislikes Petros.'

**3.3.2 Dative Anaphors** The proposed analysis predicts further distributional restrictions on *o eaftos tu* owing to covert incorporation. Baker (1988), for instance, observes that overt incorpora-

<sup>19</sup> In R&R's (1993) framework this seems to be a necessary assumption. R&R assume that in (ia) the Chain Condition is not violated (see (ib)).

- (i) a. Jan praat over zich.  
 Jan talks about SE  
 b. [Jan, +R]<sub>i</sub>, [zich, -R]<sub>i</sub>

However, to derive subject orientation R&R propose that the SE anaphor *zich* has to move to I at LF. By adjunction to I (Agr), the trace of *zich* inherits the  $\phi$ -features of the SE-I complex. As a result, the trace of *zich* will count as +R at LF, thus leading to a violation of the Chain Condition.

<sup>20</sup> The structure in (27b) posits an intermediate functional projection to which the head *eaftos* has raised, whereas we assume that the possessive is a phonological clitic that remains in its base position, thus conforming with Kayne's (1994) Linear Correspondence Axiom.

<sup>21</sup> Hale and Keyser (1991) observe that a similar restriction holds for 'lexical incorporation' (conflation).

<sup>22</sup> Anagnostopoulou (to appear) argues that experiencer object predicates like the one in (26) do not have an external subject. In Anagnostopoulou and Everaert 1995 we show that the nominative theme qualifies as a derived subject. Note that Dutch *bevalen* in (10b) is also unaccusative (cf., e.g., Everaert 1986).

A reviewer points out that he or she is not aware of any cases of overt noun incorporation into inverse-linking psych verbs as in (26). The reviewer further points out that languages with productive noun incorporation do not happen to have this class of psych verbs at all, for either accidental reasons or principled ones. (Though it is not known why, such languages typically do not have dative case experiencers, for example.)

tion is sensitive to the Head Movement Constraint (HMC), and it never takes place from a non–properly governed position. As a result of this, overt noun incorporation is practically limited to the direct object position. Clearly, the distribution of the Greek reflexive is less restricted. The descriptive generalization appears to be that *o eaftos tu* is not permitted in non–properly governed positions, but it is permitted in positions out of which covert incorporation would violate the HMC, with some additional restrictions in the latter case. As far as non–properly governed positions are concerned, we have already discussed the contrast between nominative reflexives in derived subject positions, which are well formed (see (26)), and nominative reflexives in base-generated positions, which are not (see (28)). Note, furthermore, that *o eaftos tu* is not licensed in adjunct positions, contrary to English *himself* (cf. R&R 1993).

- (29) \**O Petros idhe ena fidhi dipla s-ton eafto tu.*  
 the Petros(N) saw a snake(A) next to-the self his  
 ‘Petros saw a snake near himself.’

At first sight, the contrast between Greek and English could be straightforwardly attributed to the fact that *eaftos* cannot incorporate into the verb from an adjunct position. However, within R&R’s (1993) framework it is in principle possible for an element in an adjunct position to be used as a logophor, in which case noun incorporation would not be necessary. Given the ungrammaticality of (29), we must assume that Greek *o eaftos tu* cannot be used as a logophor, just as the Dutch anaphors *zich* and *zichzelf* cannot.

On the other hand, *o eaftos tu* is licensed in positions out of which covert incorporation into the predicate could be argued to violate the HMC. A case that immediately comes to mind is that of prepositional complements.

- (30) *O Petros<sub>i</sub> pistevi s-ton eafto tu<sub>i</sub>.*  
 the Petros(N) believes to-the self his  
 ‘Petros believes in himself.’

Under the natural assumption that the reflexive and its antecedent in (30) are coarguments, the reflexivity conditions apply. The predicate is reflexive-marked and thus should be reflexive. This means that *eaftos* must move to the verb covertly. In principle, three derivations are available.

- (31) a. [<sub>VP</sub> eaftos<sub>i</sub>-V [<sub>PP</sub> P [<sub>DP</sub> e<sub>i</sub>]]]  
 b. [<sub>VP</sub>[eaftos<sub>i</sub>-P]<sub>j</sub>-V [<sub>PP</sub> e<sub>j</sub> [<sub>DP</sub> e<sub>i</sub>]]]  
 c. [<sub>VP</sub> eaftos<sub>i</sub>-V [<sub>PP</sub> e<sub>i</sub>-P [<sub>DP</sub> e<sub>i</sub>]]]

In (31a) the noun moves directly to the verb, skipping the preposition. In (31b) the noun first incorporates into P, and the combination subsequently incorporates into V. Finally, in (31c) the noun moves successive-cyclically, exorporating from the preposition.

We will assume that (31a) is not a possible derivation because it violates the HMC. Following Baker (1996:284–285, 298), we will furthermore assume that derivations like (31b) are excluded by the Proper Head Movement Generalization (PHMG), which is stated in (32).

- (32) A lexical category cannot move into a functional category and then back into a lexical category.

The question left open, then, is why (31c) is impossible with overt but possible with covert noun incorporation. Roberts (1991) observes that excorporation is not possible in cases of genuine ‘‘morphologically’’ triggered head-to-head movement, such as affixation and overt noun incorporation. Baker (1988:73) suggests that such excorporations are excluded by a morphological principle that prohibits traces from occurring inside words. Covert noun incorporation takes place at LF, and for this reason Baker’s principle is not operative. Hence, excorporation in (31c) is possible, and for this reason these structures are well formed.

However, there appears to be an interesting restriction on the distribution of the dative anaphor in Greek. Consider the opposition in (33).

- (33) a. O Jannis<sub>i</sub> edikse tin fotografia s-ton eafto tu<sub>i</sub>.  
 the Jannis(N) showed the picture(A) to-the self his  
 ‘Jannis showed the picture to himself.’  
 b. \*O Jannis<sub>i</sub> (tu)-edikse tu eafto tu<sub>i</sub> tin fotografia.  
 the Jannis (CL-D)-showed [the self his](D) the picture(A)  
 ‘Jannis showed himself the picture.’

(33a) is grammatical, on a par with (30). The difference between (33a) and (33b) is that the goal is a PP dative in (33a) and a bare DP dative in (33b). Markantonatou (1994) argues that the alternation between PP datives and DP datives in Greek corresponds semantically and syntactically to the dative shift alternation in English. In other words, (33b) is a double object construction. It is well known (see Baker 1988, 1996) that noun incorporation of a dative argument is never possible. Under the proposal that the Greek anaphor is licensed by noun incorporation, the facts in (33) are not surprising. Note that these data do not find an explanation under either a standard binding theory approach or a chain formation approach, thus constituting strong evidence for a noun incorporation approach to the Greek anaphor.<sup>23</sup>

One way of capturing this opposition is by adopting the analysis of the double object construction in terms of an empty preposition introducing the goal argument (e.g., Kayne 1984, Baker 1988). Specifically, we propose that empty prepositions block covert noun incorporation. Follow-

<sup>23</sup> A similar contrast between the NP dative and the PP dative shows up in the case of bare plurals.

- (i) a. O Jannis edose to vivlio se fitites.  
 the Jannis(N) gave the book(A) to students  
 ‘Jannis gave the book to some students.’  
 b. \*O Jannis edose fititon to vivlio.  
 the Jannis(N) gave students(D) the book(A)  
 ‘Jannis gave students the book.’

Assuming that existential bare plurals undergo incorporation (see, e.g., De Hoop 1992), the difference between (ia) and (ib) follows from the analysis in the text.

ing Pesetsky (1995:127), we assume that empty prepositions are affixal in nature and therefore must incorporate in the overt syntax.

$$(34) [\text{VP V} [\text{PP}[\text{P e}] \text{DP}]] \rightarrow [\text{VP}[\text{P e}]_i\text{-V} [\text{PP } t_i \text{DP}]]$$

LF movement of *eaftos* in these cases will result in the configuration shown in (35).

- (35) a.  $[\text{VP V} [\text{PP}[\text{P e}] [\text{DP eaftos}]]] \rightarrow$   
 b.  $[\text{VP}[\text{P e}]_i\text{-V} [\text{PP } t_i [\text{DP eaftos}]]] \rightarrow$   
 c.  $[\text{VP}[\text{P e}]_i\text{-V} [\text{PP eaftos}_j\text{-}t_i [\text{DP } e_j]_j]] \rightarrow$   
 d.  $[\text{VP eaftos}_j\text{-}[[\text{P e}]_i\text{-V}][\text{PP } e_j\text{-}t_i [\text{DP } e_j]]]$

In overt syntax the affixal preposition will move to the verb (35b). At LF *eaftos* will move either to the trace of the preposition (35c) and subsequently to the verb (35d), or directly to the verb if the trace of the preposition is deleted. There are at least four ways to exclude the derivation in (35). Either incorporation to a trace is impossible, or excorporation from a trace is impossible. But even if these two processes are possible, the resulting configuration violates either the PHMG or some version of what is known as Myers's Generalization (see Pesetsky 1995:73–76), the latter viewed as a syntactic constraint.

### 3.4 The Structural Properties of English *himself*, Dutch *zichzelf* and *hemzelf*

R&R (1993) take the structure of the English anaphor *himself* to be (27a), as in Dutch. Following Abney (1987) and others, they assume that the pronoun occupies the D position; in addition, they assume that *self* heads the complement NP. If we follow the spirit of Abney's analysis of NPs, both the D and the N head the phrase (see Ingria 1982 for a similar analysis). Given that *him* is +R and *self* is +SELF, the most straightforward conclusion should be that *himself* is +SELF, +R. As discussed before, such elements are excluded unless they have the internal structure of the Greek inalienable possession anaphor. We will show that English *himself* (and its Dutch analogues) is crucially different from the Greek anaphor, both in its specification and in its structure.

In order to force *himself* into qualifying as –R, R&R (1995) argue that *him* in *himself* is not fully specified for  $\phi$ -features. Assuming that Case crucially belongs to the set of  $\phi$ -features, they argue that in English, *him* is specified as  $[\text{CASE } -\text{nom}, +\text{acc}]$  since it contrasts with *he*. *Himself*, though, is claimed not to be marked  $[\text{CASE } -\text{nom}, +\text{acc}]$ , since it does not contrast with *heself*, leading to the conclusion that *himself* is unspecified for Case (see footnote 8) and therefore classified as –R.<sup>24</sup>

<sup>24</sup> Elsewhere (Anagnostopoulou and Everaert 1995) we have questioned whether it will do to appeal to the nonexistence of *heself* as evidence for the lack of a Case distinction in order to justify underspecification. One could argue that the nonexistence of *heself* is precisely what should be explained. In such a line of argumentation one would have to show that the English reflexive head *self* is underspecified for gender or number and that this underspecification of *self* is a sufficient condition for the whole phrase to qualify as –R. We will not fully pursue this line of argumentation here but only make some tentative observations pointing in the direction of that position. First, note that English is a ‘‘natural gender’’ language. Following Pollard and Sag (1994), we assume that this does not necessarily mean that gender is not

Let us now discuss whether there is any reason to assume that *himself* has a representation similar to that of *o eaftos tu* in (27b) with *him* as the possessive pronoun and *self* as the noun heading the phrase. Clearly, this position has been adhered to in the literature, starting with Helke 1979. However, two arguments indicate that such an inalienable possession structure cannot be maintained for the English reflexive.

First, observe that *himself* is syntactically undecomposable, which has led Safir (1996) and others to argue for a compoundlike structure. The fact that English *self* cannot surface alone as an emphatic reflexive, unlike its analogues in Dutch and other Germanic languages, constitutes independent evidence in favor of such a position. Second, Ingria (1982:65–66) observes that, distributionally, reflexives have much in common with pronouns, which seems to indicate that they are (co-)heading the phrase, contrary to an inalienable possession analysis.

- (36) a. John turned her in./\*John turned in her.  
 b. John turned himself in./\*John turned in himself.

We want to combine the insights of R&R's DP analysis of the English reflexive with Safir's (1996) insight that the English anaphor behaves like a compound.<sup>25</sup> To this end, we will follow Abney's (1987:285–287) analysis of *everyone*, and we will assume that *himself* basically has the structure shown in (37a) where both the pronoun and *self* head the phrase but that the pronoun and *self* are morphologically merged at PF (analogously to mergers such as German *zum* < *zu dem*).<sup>26</sup>

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grammatically encoded. Examples such as (i) and (ii) (from Pollard and Sag 1994) indicate that *self*, unlike pronouns, might be underspecified for gender.

- (i) The faculty is/are voting itself/themselves a raise.  
 (ii) The ham sandwich at table six just made a fool of himself/itself.

Second, Joseph (1979) observes that the reflexive form is shaped by two distinct number agreement processes. The pronominal part agrees in number with the syntactic antecedent, whereas the *self* part seems to "agree with the actual referent," as is clear from "nurselike" *we* sentences such as (iii).

- (iii) We seem a bit displeased with ourself/\*ourselves/\*yourself, don't we?

This example makes it clear that the  $\phi$ -feature marking of *self* differs from the  $\phi$ -feature marking of pronouns, thus strengthening R&R's position that English *himself* is –R.

<sup>25</sup> There are two potential arguments against a compound analysis of English reflexives. First, pronouns generally do not appear in compounds. As is well known, there are counterexamples in English, especially with respect to compounding, like *she-cat*, *he-goat*, *she-devil*. English *himself* could be a similar exception. Second, the compound *himself* does not have the stress pattern of normal English compounds (*himself/shé-devil*). However, at least some compounds in English like *throughout* have a similar deviant stress pattern. Note that the stress pattern of *himself* is also not straightforwardly accounted for under a "pronominal" analysis. A construction like *Í Claudius* would have a similar phrase structure (see Abney 1987) but has a different stress pattern.

<sup>26</sup> It is very difficult to find convincing evidence that *self* is heading the phrase/compound. We have found two possible arguments for taking *self* and not the pronoun to be the element heading the phrase.

If *self* were the head, one would expect (ia) to be better than (ib)—granting that both sentences are judged ungrammatical—since verb agreement would target the 3rd-person-marked *self* head.

- (i) a. ?\*You think yourself works too hard.  
 b. \*You think yourself work too hard.

Native speakers confirm that there is a marginal difference in this direction. However, this position is not necessarily an

- (37) a. [<sub>DP</sub>[<sub>D'</sub>[<sub>D</sub> him] [<sub>NP</sub>[<sub>N</sub> self]]]]  
 b. [<sub>DP</sub>[<sub>D'</sub>[<sub>D</sub> him] [<sub>N</sub> self<sub>i</sub>]] [<sub>NP</sub>[<sub>N</sub> e<sub>i</sub>]]]]

Given such a structure, and given its –R specification, we predict that the English counterpart of the Greek (26) should be ungrammatical, as indeed it is.<sup>27</sup>

- (38) \*Himself<sub>i</sub> pleases/appeals to John<sub>i</sub>.

Dutch *hemzelf* is fully parallel to Dutch *zichzelf*, and they both differ from English *himself*. For one thing, Dutch *zelf* can be used independently as an emphatic reflexive (39a). Moreover, *zelf*, unlike *self*, does not vary in number depending on the antecedent (39b), and the pronominal element uniformly has the Case of the position in which the pronoun + *zelf* occurs (39b,c).

- (39) a. Jan maakte het vuur zelf aan.  
 Jan made the fire himself on  
 'Jan lighted the fire himself.'  
 b. Zij<sub>i</sub> dachten dat er over henzelf<sub>i</sub> gepraat werd.  
 they thought that there about them themselves talked was  
 'They thought that people were talking about them.'  
 c. Ik<sub>i</sub> dacht dat er over mijzelf<sub>i</sub> gepraat werd.  
 I thought that there about me myself talked was  
 'I thought that people were talking about me.'

Finally, *self* allows a reified substantive reading as in (40a). However, it is not immediately clear that Dutch *zelf* allows such a reading; (40b) is generally considered ungrammatical by native speakers.

- (40) a. John most valued Mary's self.  
 b. \*Jan waardeerde Marie's zelf het meest.  
 Jan valued Marie's self the most

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argument for an inalienable possession analysis and against a compound analysis since in the compound analysis *self* would categorially head the compound, given the Right-hand Head Rule, leading to the same prediction that (ia) is slightly better.

As Stowell (1996) observes, in headlines the pronominal part of the reflexive can be dropped (as in other cases) but *self* is retained, which might be taken as an argument that *self* is the head. However, he notes (personal communication) that following his proposals, the failure to drop the pronoun should have the effect of turning off pronoun drop in a c-commanded position. It is therefore predicted that (iib) should be worse than (iic).

- (ii) a. Clinton describes himself as smarter than his wife.  
 b. ?Clinton describes himself as smarter than wife.  
 c. Clinton describes self as smarter than wife (headline style)

This prediction is apparently borne out, suggesting that the pronoun *him* is being treated as syntactically active to the extent that failure to drop it makes it bad to drop the pronoun that it c-commands.

<sup>27</sup> The fact that English *himself* is a compound has the consequence that *self* cannot incorporate into the verb, as discussed in section 5.

For these reasons, there seems very little evidence that Dutch *zichzelf* (and *hemzelf*) has the structure that R&R attribute to it. On the other hand, the observed differences between English and Dutch follow straightforwardly if Dutch *zichzelf* has the structure in (41) (cf. Everaert 1986), with *zelf* functioning as a focusing particle as proposed by Sanchez (1996) for Spanish *mismo*.

(41) [<sub>DP</sub>[<sub>DP</sub> zich/hem] [<sub>QP</sub> zelf]]

Given the structure in (41), there seems no other option than to assume that the feature specification of *hemzelf* is +SELF, +R, the latter property being determined by the pronoun.

An interesting consequence of the proposed asymmetry between English *self* and Dutch *zelf* is that the examples in (42) are correctly predicted to be ungrammatical.<sup>28</sup>

- (42) a. \*Jan<sub>i</sub> zag hemzelf<sub>i</sub>.  
           Jan saw him self  
       b. \*Jan<sub>i</sub> schoot op hemzelf<sub>i</sub>.  
           Jan shot at him self

In order for *hemzelf* to avoid the clash between the reflexivity conditions and the Chain Condition, either *hem* must be like the Greek *tu* (a real possessor), or *hemzelf* must have a structure in which both the pronoun and *zelf* head the phrase (as in English). Since both options are not available in Dutch, there is no way to simultaneously satisfy the reflexivity conditions and the Chain Condition.<sup>29</sup>

#### 4 Other Cases of +SELF, +R

In the preceding sections we have argued that +SELF, +R anaphoric expressions exist and that they may function as reflexives as long as they have the appropriate structural properties. As noted in section 1, +SELF, +R elements of any kind are expected to be well formed in *logophoric contexts* where there is neither chain formation nor reflexive marking of a syntactic predicate. Almost all *hemzelf* examples turn out to be such cases.

<sup>28</sup> We must be careful in distinguishing the SELF marker *zelf* and the emphatic pronoun *zelf*. It is clear that in a sentence like (i) *zelf* cannot be a SELF marker triggering reflexive marking of the predicate.

- (i) [Jan zelf] wilde het niet doen.  
       Jan himself wanted it not do  
       ‘Jan himself didn’t want to do it.’

We assume that in examples like (39b–c) and (42) *zelf* is ambiguous between an emphatic marker and a SELF marker. Under both readings (42) is excluded by the Chain Condition; (39b–c) are well formed under the reading in which *zelf* is taken as an emphatic marker.

<sup>29</sup> There is a third possibility: underspecification of *hem* for structural versus inherent Case. Again, Dutch does not have this option, but Frisian does. For that reason (i) is grammatical (cf. R&R 1995).

- (i) Willem<sub>i</sub> bewûnderet himsels<sub>i</sub>.  
       Willem admires himself

- (43) a. Zijn<sub>i</sub> T-shirt is door hemzelf<sub>i</sub> beschilderd.  
 his T-shirt is by him self painted  
 'His T-shirt is painted by himself.'  
 b. Hij<sub>i</sub> koopt twee tickets voor zijn vriendin en hemzelf<sub>i</sub>.  
 he buys two tickets for his girlfriend and him self

These +SELF, +R cases are not excluded by the Chain Condition for the simple reason that no chain formation takes place and the reflexivity conditions are vacuously satisfied. In (43) *hemzelf* is not  $\theta$ -marked by the verb (cf. R&R 1993:715); hence, it cannot reflexive-mark the verbal predicate and is interpreted logophorically.

## 5 Conclusions

In this article we have discussed the typology of anaphoric expressions put forward by R&R (1993), and we have argued that +SELF, +R elements can be incorporated into R&R's framework under certain conditions. We investigated the distribution and the structural properties of the Greek local anaphor *o eaftos tu*, and we proposed that it is able to satisfy Reflexivity Condition A as a result of abstract incorporation despite its inability to undergo chain formation. This analysis makes valid predictions concerning the distribution of Greek *o eaftos tu* as opposed to English/Dutch *himself/zichzelf*. *O eaftos tu* patterns with *himself/zichzelf* as far as the reflexivity conditions are concerned, but it differs from *himself/zichzelf* with respect to chain formation and thus the configurational effects enforced by chain formation. This strongly supports the view of binding as an interaction of two modules, namely, well-formedness conditions on reflexive predicates and the Chain Condition.

The broader theoretical implication of our proposal is that referential (in)dependence should be dissociated from the  $\pm R$  property, contra R&R. If we follow R&R in assuming that the  $\pm R$  marking of an element is derived from its  $\phi$ -feature specification, we expect to find nouns fully specified for  $\phi$ -features that are also SELF-marked. Just as the class of  $-$ SELF elements contains pronouns such as *him*, which are +R, and SE anaphors such as *zich*, which are  $-$ R, so +SELF elements divide into *o eaftos tu*- and *zichzelf*-type elements, respectively. The notion of referential (in)dependence finds no straightforward translation in terms of the morphological feature specification determining chain formation. However, there is some connection. In our view,  $-$ R specification implies that an element will be syntactically bound since it will be forced to undergo chain formation if it is in an argument position of a syntactic predicate. In that respect, it could be called referentially dependent. A +R specification, on the other hand, implies that there is no chain formation, and thus no a priori syntactic dependency. However, this does not entail that +R elements are always referentially independent. We believe that the semantic properties of an expression can directly determine whether or not it will qualify as referentially (in)dependent, and in this respect we agree with R&R's original position in R&R 1991. There they assume that SELF has the lexical structure of a relational noun (cf. Pica 1987, Safir 1996) denoting an identity relation between two arguments ( $[\text{SELF}\langle x, x \rangle]_{\text{DP}}$ ) and this is sufficient to establish a syntactic dependency.

If it is true that the semantics of SELF constitute a sufficient condition for a syntactic dependency to be triggered, then two questions arise. First, is there reason to assume that  $\pm R$  marking is still relevant for SELF elements? Second, is SELF-incorporation a generalized mechanism for establishing this syntactic dependency, as assumed in R&R 1991? With respect to the first question, the distributional differences between the Greek *o eaftos tu*, the Dutch *hemzelf*, and the English *himself* show that appealing to the  $\pm R$  property, and hence to chain formation, is crucial. As for the second question, R&R (1991) propose a mechanism that forces every SELF element to undergo covert head adjunction to the verb. They assume that SELF acts as an operator on predicates and as such, it must undergo LF adjunction. As a result of this movement operation, the identity restriction is forced upon the predicate. In R&R 1993, SELF-marking of an argument position has the same effect as LF movement of SELF. However, it is crucially different in that the identity relation is forced upon the predicate without covert movement. We agree with the effect the semantic specification SELF imposes on the predicate. However, we have argued that the two different options for SELF-marking have an empirical effect. We have shown that Greek *eaftos* undergoes LF incorporation, but we crucially want to argue that English *self* and Dutch *zelf* do not incorporate. Under our analysis, in the case of Dutch, incorporation is prohibited because *zelf* is adjoined to the NP. In the case of English, *self* does not incorporate because it is part of a compound. This analysis makes the strong prediction that crosslinguistically, anaphors of the type *o eaftos tu* will have distributional restrictions similar to those we have discussed here for Greek. Whether or not this prediction is borne out awaits further research.

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## Middles and Reflexivity

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This article investigates the argument structure of middle predicates. It argues that middle verbs syntactically project the entire argument grids of their active counterparts; however, middle verbs, like passive verbs, project the external (Agent) arguments of their active counterparts as adjuncts. These demoted Agent arguments can appear, in middle constructions, as the objects of *for*-PPs.

*Keywords:* Argument Demotion, middle constructions, reflexivity, semantic predicate

## 1 Introduction

The derivation of middle constructions has generated much recent debate. Theorists such as Keyser and Roeper (1984), Roberts (1987), Carrier and Randall (1992), Stroik (1992, 1995), Hoekstra

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