

Greek Anaphora in Cross-Linguistic Perspective

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1 Three types of anaphors

1.1 Introduction

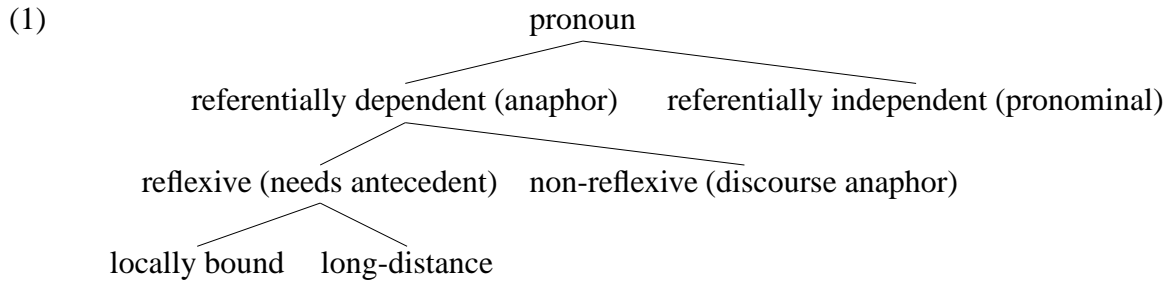
The referentially dependent pronouns of Homeric and Classical Greek are typologically commonplace, but pose challenges to theories of binding and anaphoric reference. Instead of a single anaphor category posited in classical Binding Theory, or the two types that Reinhart & Reuland (1993) call SE- and SELF-anaphors, Greek (like many other languages) distinguishes three types. Anaphors of the third type, which I'll refer to as DISCOURSE ANAPHORS, are well known from a large number of other languages (English, German, Turkish, Modern Greek, Fijian, Malay, Manam, among others). Yet they have caused a lot of theoretical trouble (Cole, Hermon & Huang 2006). Because they need not have a structural antecedent, they have been variously treated as pronominals or logophors. But they differ from pronominals in that they serve as true reflexive anaphors whenever a dedicated reflexive is either lacking in the language altogether, or prohibited by some constraint in a given environment. I show this for Greek in this section and in section 4 below. And, as I show in section 5, they are quite unlike logophoric pronouns or logophoric uses of reflexives, which could plausibly be farmed out to the theory of discourse. It follows that no binding theory that equates them to pronominals — including even the sophisticated theory of Reinhart & Reuland 1993 and Reuland 2001 — can provide a coherent account of the discourse anaphors, and that they also cannot be separated from sentence grammar without loss of generality, despite the methodological convenience and/or theoretical motivation that such a segregation of sentence grammar and discourse may have in other areas. Rather, they belong in the province of a theory of anaphora and pronominal reference that deals with both sentence structure and the organization of discourse. I also argue that the relation of referential dependency to ϕ -feature composition and accentual properties is more complex than has been thought.

My analysis builds on an earlier effort (Kiparsky 2002) to develop a parametric theory of pronouns, which has turned out to apply well to Greek.¹ The descriptive generalizations for Homeric and Classical Greek are set forth in the remainder of this section, followed by a comparison of theoretical approaches in sections 2 and 3. The heart of the argument is in sections 3.2, 4, and 5.

To keep things straight, I'll use ANAPHOR as a collective term for any referentially dependent expression, reserving REFLEXIVE for those anaphors which require a structural antecedent. Anaphors and PRONOMINALS (referentially independent pronouns) together comprise the category of PRONOUNS. Descriptively, the taxonomy that has to be made theoretical sense of looks like this:²

¹In addition to trawling the texts on Perseus, I consulted the very thorough monograph of Petit (1999) for Homeric Greek reflexives, and Powell (1933, 1934) for Herodotus and Thucydides. I also learned a lot from Peels' (2007) perceptive study of long-distance reflexives in Herodotus, which Eric Reuland kindly brought to my attention.

²In Kiparsky 2002 I posited an additional intermediate domain, largely for the sake of certain super-long-distance reflexives that can apparently allow an antecedent outside of their finite clause. I now think the class of reflexives in



1.2 Homeric Greek

In Homeric Greek, BARE REFLEXIVES bear case, person, and number features. The third person singular bare reflexive is made from the pronominal stem $\acute{\epsilon}$ -: Sg.Gen. $\acute{\epsilon}\sigma$, $\sigma\acute{\upsilon}$, Sg.Acc. $\acute{\epsilon}\epsilon$, $\acute{\epsilon}$, Sg.Dat. $\sigma\acute{\iota}$. The plural forms in $\sigma\varphi$ -, and the first and second person forms, are shared with the personal pronouns, e.g. (2f). The reflexives require a subject antecedent (overt or null) within the same finite domain, either in the same clause, as in (2a,b,c), or across an infinitive clause boundary, either ECM as in (2d,f,g), or object control as in (2h). The same antecedent requirement holds for the reflexive possessive $\acute{\epsilon}\acute{\omicron}\varsigma$, $\acute{\epsilon}\acute{\eta}$, $\acute{\epsilon}\acute{\omicron}\nu$, which agrees with the head in gender, case, and number, like an adjective (see (2c)).

(2) BARE REFLEXIVES: finite domain

- a. $\delta\iota\ \gamma\acute{\alpha}\rho\ \alpha\upsilon\tau\epsilon\ \beta\acute{\iota}\eta\nu\ \sigma\acute{\upsilon}\iota\ \pi\alpha\tau\rho\acute{\varsigma}\ \acute{\alpha}\mu\epsilon\acute{\iota}\nu\omega\nu\ \textit{Il. 1.404}$
 he Prt Prt might-ACC Refl-GEN father-GEN stronger-NOM
 for he_i is mightier than **his_i** father
- b. $\acute{\alpha}\mu\phi\iota\ \acute{\epsilon}\ \pi\alpha\pi\tau\acute{\eta}\nu\alpha\varsigma\ \textit{Il. 15.574, 4.497}$
 around him peer-PART
 glancing warily around **him**
- c. $\tau\acute{\omicron}\tau\epsilon\ \delta\acute{\epsilon}\ \textit{Ze}\acute{\upsilon}\varsigma\iota\ \acute{\epsilon}\chi\tau\omicron\rho\iota\jmath\ \delta\acute{\omega}\chi\epsilon\nu\ \acute{\eta}\jmath\ \kappa\epsilon\varphi\alpha\lambda\acute{\eta}\ \varphi\omicron\rho\acute{\omicron}\epsilon\iota\nu\ \textit{Il. 16.800}$
 then Prt Zeus Hector-DAT give-PERF3SG PossRefl-FDAT head-FDAT wear-INF
 but then Zeus_i gave it (the helmet) to Hector_j (for him_j) to wear on **his_j** head
- d. $\sigma\acute{\upsilon}\ \tau\acute{\iota}\nu\acute{\alpha}\ \varphi\eta\sigma\iota\nu\ \acute{\omicron}\mu\acute{\omicron}\iota\omicron\nu\ \sigma\acute{\iota}\ \acute{\epsilon}\mu\epsilon\nu\alpha\iota\ \Delta\alpha\nu\acute{\alpha}\omega\nu\ \textit{Il. 9.305-6}$
 not anyone-ACC say-3SG equal-ACC Refl-3SGDAT be-INF Danaans-PLGEN
 he claims none of the Danaans to be equal to **him**
- e. $\acute{\alpha}\sigma\pi\acute{\iota}\delta\alpha\ \tau\alpha\upsilon\rho\epsilon\acute{\iota}\eta\nu\ \sigma\chi\acute{\epsilon}\theta\prime\ \acute{\alpha}\pi\acute{\omicron}\ \acute{\epsilon}\sigma\ \textit{Il. 13.163}$
 shield-ACC bull-hideACC hold-AOR3SG from Refl-GEN
 he held the shield of bull's hide away from **him**
- f. $\acute{\epsilon}\mu\acute{\epsilon}\ \varphi\eta\mu\iota\ \mu\omicron\lambda\acute{\upsilon}\ \pi\rho\omicron\varphi\epsilon\rho\acute{\epsilon}\sigma\tau\epsilon\rho\omicron\nu\ \acute{\epsilon}\acute{\iota}\nu\alpha\iota\ \textit{Od. 8.221}$
 me-ACC say-1SG much better-ACC be-Inf
 I declare that **I** am best by far.
- g. $\varphi\eta\sigma\iota\ \acute{\epsilon}\acute{\epsilon}\ \delta\prime\ \acute{\epsilon}\xi\omicron\chi\alpha\ \pi\acute{\alpha}\nu\tau\omega\nu\ \acute{\alpha}\theta\alpha\nu\acute{\alpha}\tau\omega\nu\ \kappa\epsilon\chi\omicron\lambda\acute{\omega}\sigma\theta\alpha\iota\ \textit{Il. 24.134}$
 say-3SG Refl-ACC Prt especially all-PLGEN immortal-PLGEN is angry-3SG
 [Zeus] says that of all the immortals **he** is especially enraged

question might be a heterogeneous mix of discourse anaphors and logophors; in any case they will not play a role in the present discussion.

- h. ἧῖ τ' ἐκέλευσεν ἕοι μνήσασθαι ἀνάγκη *Od.* 7.217
 which Prt urge-AOR3SG Refl-GEN remind-INF necessity-DAT
 [nothing is worse than a belly] which forces one to remember **it**

If the reflexive is a COARGUMENT of the antecedent, it must be reinforced by αὐτό- ‘self’, inflected for gender, case, and number. The two words form a phrasal COMPLEX REFLEXIVE, which can be syntactically separated by clitics. αὐτό- must also be added to the 1/2 person pronouns in their reflexive use, as in (3d).

(3) COMPLEX REFLEXIVES: coargument domain

- a. ἐὲ δ' αὐτὸν ἐποτρύνει μαχέσασθαι *Il.* 20.171
 Refl-ACC Prt self-ACC rouse-3SG fight-AORINF
 and he rouses himself to fight
- b. πορφυρέῃ νεφέλῃ πυκάσσατο ἑ αὐτήν *Il.* 17.551
 purple-DAT cloud-DAT cover-PART Refl-ACC self-ACC
 covering herself in a purple cloud
- c. ἀμυνόμενοι σφῶν τ' αὐτῶν *Il.* 12.155
 defend-PART Refl-PLGEN and self-PLGEN
 and defending themselves
- d. σὲ γὰρ αὐτήν παντὶ εἴσχεις *Od.* 13.313
 you-2SGACC for self.F-ACC all-DAT make-like
 for you make yourself look like everything (you take any shape you want)
- e. εὖ ἐντύνασαν ἑ αὐτήν *Il.* 14.162
 well prepare-AORPART.F-ACC Refl-ACC self-ACC
 having well prepared herself
- f. οἷ τ' αὐτῷ κῦδος ἄροιτο *Il.* 10.307
 Refl-DAT and self-DAT glory-ACC win-OPT3SG
 and to whoever would win glory for himself

The clitics ἐο, ἐ, οἷ — identical to the bare reflexives ἕο, ἕ, οἷ except for being unaccented — refer to a discourse topic. Being referentially dependent, they cannot be used deictically, nor can they head restrictive relative clauses. But unlike reflexives, they do not require a structural antecedent.

(4) DISCOURSE ANAPHORS

- a. σχεδόθεν δέ οἱ ἦεν ὄλεθρος *Il.* 16.800
 near Prt him-DAT was ruin
 [Context: Zeus_i gave it to Hector_j,] yet his_j ruin was near (continuation of (2c))
- b. ἦν διὰ μαντοσύνην, τήν οἱ πόρε Φοῖβος Ἀπόλλων *Il.* 1.72
 self's by divination which him-DAT give-AOR3SG Phoebus Apollo
 [Calchas, who had guided the ships] by the art of divination which Phoebus Apollo had given him
- c. ἀτασθαλῖαι δέ οἱ οἷω ἐχθραὶ ἔσαν *Il.* 21.146
 reckless deeds-PI Prt him-DAT alone-DAT hateful-PPL were-IMP3PL
 [Context: Leiodes arose.] Reckless deeds were hateful only to him.

d. μισθὸς δέ οἱ ἄρκιος ἔσται. *Il.* 10.304

reward Prt he-DAT certain be-MIDFUT3SG

[Context: Who is there who would promise me this deed and and accomplish it for a great gift?] His reward will be certain.

Unlike anaphors, PRONOMINALS are referentially independent. They can introduce a new discourse topic (though they need not do so), require no antecedent, and can be used deictically and as heads of restrictive relative clauses.

Each of the three types of Homeric anaphor has numerous parallels in familiar languages. Bare reflexives are SE-anaphors in the sense of Reinhart & Reuland 1993, comparable to Dutch *zich* and Swedish *sig*. The complex reflexives are what R&R call SELF-anaphors; Homeric ἐὲ αὐτόν (later Greek ἑαυτόν) are analogous to Dutch *zichzelf* and Swedish *sig själv*; in fact, the second component αὐτό- also functions outside of the pronominal system as an “emphatic” predicate of identity, e.g. αὐτόν βασιλῆα ‘the king himself’ (*Il.* 7.179), just as *själv* does. As for discourse anaphors, though not as highly profiled in Germanic, they are represented by English *it* (as opposed to *he*, *she*, which are pronominals). Another well-known example is German *er*, *sie*, which behave like discourse anaphors when referring to inanimates and like pronominals when referring to animates. The ones that also function reflexively, such as Old English *hine*, are more famous because they pose a puzzle for binding theories; we will investigate a selection of them below and show that they have analogs in Greek.

1.3 Classical Greek

Two post-Homeric innovations transform the Homeric system into the system of Classical Greek prose. The bare 3.Sg. reflexives ἔο, ἔ, οἷ, as well as the 1Sg. and 2Sg. pronouns ἐμέ, σέ in their reflexive function (e.g. (3d)), fused with αὐτοῦ, αὐτόν, αὐτῷ into a set of new compound reflexives ἑαυτό-, ἑμαυτό-, σεαυτό-. In a second development fully completed only after Herodotus, bare αὐτοῦ, αὐτόν, αὐτῷ replaced unaccented ἔο, ἔ, οἷ as discourse anaphors, while still keeping the emphatic use they already had in Homeric, e.g. αὐτοῦ Κύρου ‘of Cyrus himself’ (*Xen. Anab.* 1.2.21).

The loss of the simple reflexives ἔο, ἔ, οἷ caused the distinction between bare and complex reflexives seen in (2) and (3) to be neutralized in the third person. The new compound reflexives that replace them in Classical Greek have the combined distribution of both; they simply require a subject antecedent within the same finite domain, either in the same clause or across an infinitive clause boundary, and they don’t care whether it is a coargument or not. On the other hand, coargumenthood still matters for the reflexives of the first and second persons. In these persons, compound reflexives must have an antecedent within their clause. If the antecedent is a coargument, the compound reflexives are obligatory, otherwise the plain first and second person pronouns are also possible.

The outcome of these changes is that anaphors now differentiate between four successively larger domains, (A) coarguments, (B) clause-internal, (C) finite, (D) discourse. These are presented in (5)–(8).

(A) If the antecedent is a coargument (and therefore necessarily within the same clause), the reflexive is obligatory for all persons: in (5a), ἑαυτάς ‘themselves’ could not be replaced by σφᾶς ‘them’, and in (5b), ἑμαυτήν ‘myself’ could not be replaced by ἐμέ ‘me’.

(5) Coargument

a. αἱ γὰρ γυναῖκες [...] ἑαυτάς ἐπικατερίπτου Xen. *Anab.* 4.7.13
the-PL Prt women-PL Refl.F-PLACC threw-down-IMP3PL

the women threw themselves down

- b. ἀλλ' οὐκ ἐν τάχει ἔρριψ' ἑμαυτὴν τῆσδ' ἀπὸ στύφλου πέτρας Aesch.
but not in haste throw-AOR1SG Refl.F-ACC this-GEN from rugged rock
PB 745
why did I not throw myself at once from this rugged rock?

(B) With a clause-internal non-coargument antecedent, a reflexive is obligatory in the third person, as it is in (A). In the first and second person, though, there appears to be an option.

(6) Clause-internal non-coargument

- a. πολλάκις λέγειν ἀναγκασθήσομαι περὶ ἑμαυτοῦ Dem. *De Cor.* 4
often speak-INF force-FUTPASS1SG about myself
I shall often be obliged to speak about myself
- b. περὶ ἐμοῦ βούλομαι εἰπεῖν ἐπίφθονον μὲν ἀληθὲς δέ Gorgias, *Palamedes*
about me want-1SG say-1SG invidious-ACC but true-ACC Prt
I want to say something odious but true about me

(C) The third person reflexive ἐαυτό- can have an antecedent across a clause boundary, but it must be within a finite clause. Non-reflexive αὐτοῦ, αὐτόν, αὐτῶ, the plural σφέων, σφίσι, σφέας (σφᾶς), and in Herodotus, the 3Sg. clitic μιν, also occur in this configuration, as in (7d,e,f); in (7g) the reflexive anaphor ἐωυτῶ alternates with the discourse anaphor αὐτόν in parallel infinitive clauses governed by the same verb. Again, first and second person reflexives are more restricted: they cannot have a long-distance antecedent at all. For example, reflexive ἑμαυτοῦ could not replace ἐμοῦ in (7f) (in the intended sense where περὶ ἐμοῦ is in the lower clause).

(7) Across clause boundary but within same finite domain

- a. ὁ δ' ἀκολουθεῖν μ' ἐκέλευεν ἑαυτῶ Dem. *Phormio* 13
he Prt follow-INF me-Acc order-IMP3SG himself-DAT
He bade me follow him
- b. συνέπεισε τὸν δῆμον ... φυλακὴν ἑαυτῶ δοῦναι Dem. *Const.* 14.1
persuade-Aor3Sg the people-ACC ... guard-ACC himself-DAT give-INF
he_i persuaded the people to give him_i a guard
- c. ἑαυτῶ μὲν χρῆσασθαι ἐκέλευεν ἐκεῖνόν τε καὶ Λακεδαιμονίους ὅτι
himself-DAT Prt use-INF order-IMP3SG him-ACC and also Spartans-PLACC whatever
βούλονται Thuc. 7.85.1
want-3SG
He entreated him and the Spartans to do what they pleased with him
- d. λέγεται δεηθῆναι ἡ Κίλισσα Κύρου ἐπιδείξαι τὸ στρατεύμα αὐτῇ Xen.
say-Pass3Sg ask-Inf the Cilician Cyrus-GEN show-INF the army-ACC her-DAT
Anab. 1.2.14
the Cilician_i [queen] is said to have asked Cyrus to show the army to her_i
- e. τοὺς φυγάδας ἐκέλευσε σὺν αὐτῶι στρατεύεσθαι Xen. *Anab.* 1.2.2
the-ACC exiles-ACC urge-AOR3SG with Refl-DAT wage war-INF
[Cyrus] urged the exiles to go to war together with him

- f. ἀκούω περι ἐμοῦ Θηραμένην ἄλλους τε λόγους
 hear-1SG about me-GEN Theramenes-ACC other-PLACC and words-PLACC
 βλασφήμους εἰρηκέναι Dem. *Letters* 4
 slanderous-PLACC utter-PERFINF
 I hear that Theramenes has uttered other slanderous statements about me
- g. ὁ δ' ἐκέλευε αὐτοὺς οἰκία τε ἐωυτῷ ἄξια τῆς
 he Prt order-IMPERFSG them-ACC house-PLACC and Refl-DAT worthy-PLACC the-GEN
 βασιληῆς οἰκοδομῆσαι καὶ κρατῦναι αὐτὸν δορυφόροις
 dominion-GEN build-AORINF and strengthen-INF him-ACC spearmen-PLDAT
 He ordered them to build him houses worthy of his royal power, and to strengthen him
 with spearmen.

(D) In discourse anaphora, *αὐτό-* is used in the oblique cases, as the functional counterparts of nominative \emptyset , οἱ. For example, in (8a), the demonstrative *ἐκείνων* ‘their’ brings in a discourse topic, which is then anaphorically referred to by *αὐτούς*. In the more complex (8b) — the continuation of example (7e) — there are two concurrent foregrounded topics, Cyrus and the exiles, each referred to by *αὐτό-*.

(8) Discourse anaphora

- a. ἔχω γὰρ τριήρεις ὥστε ἐλεῖν τὸ ἐκείνων_i πλοῖον: ἀλλὰ [...] οὐκ ἔγωγε αὐτούς_i διώξω Xen. *Anab.* 1.4.8
 have-1SG Prt triremes with which overtake-INF the their-GENPL ship-ACC. But [...] not I-EMPH them-PLACC pursue-Fut-1SG
 I have triremes for overtaking their ship. But I shall not pursue them.
- b. ὑποσχόμενος αὐτοῖς_j, εἰ καλῶς καταπράξειεν ἐφ' ἃ ἐστρατεύετο, μὴ πρόσθεν παύσεσθαι πρὶν αὐτούς_j καταγάγοι οἴκαδε. οἱ_j δὲ ἠδέως ἐπειθόντο: ἐπίστευον γὰρ αὐτῷ_i Xen. *Anab.* 1.2.2
 promising them-DAT if well accomplish-AOROPT3SG for what fight-IMP3SG not before stop-FUTINF before them-ACC lead-AOROPT3SG home they Prt gladly obey-IMP3PL trust-IMP3PL Prt him-DAT
 [Context: Cyrus_i urged the exiles_j \emptyset_j to go to war together with him_i.] \emptyset_i promising them_j that, if he_i should successfully accomplish the mission for which he_i was going to war, he_i would not stop until he_i had brought them_j home. And they_j gladly obeyed, for they_j trusted him_j.

Perhaps surprisingly, neither of the Greek stages are easy to reconcile with current theories of binding and anaphora. I will attempt an analysis in two of them, the very sophisticated one of Reinhart & Reuland (1993) and Reuland (2001), and a rather more naive proposal of my own (Kiparsky 2002). Their affinities make for some instructive comparisons, which in my opinion come out in favor of the latter.

2 Binding, blocking, and obviation

My proposal (Kiparsky 2002, I'll call it Blocking and Obviation Theory, or BOT for short) is based on the idea that the structural properties of pronouns, and of anaphors in particular, are exhaustively characterized by two parameters, whose settings specify (a) their anaphoric domain, and (b) whether they are OBVIATIVE or NON-OBVIATIVE.

- (9) a. *Antecedent domain*: In what domain is their reference determined?

- b. *Obviation*: Can they overlap in reference with a coargument?

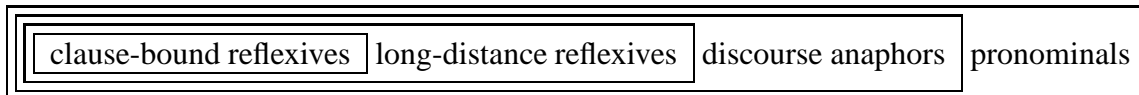
The values of the domain parameter specify an upper bound on the domain in which the reference of an anaphor must be determined. Pronominals have no such domain and the parameter is unvalued for them.

(10) *Parameter values for domain specification of referentially dependent pronouns*

- a. Within the same clause: clause-bound reflexives, e.g. *himself*.
- b. Within the same finite sentence: long-distance reflexives, e.g. Swedish *sig*.
- c. Within a discourse or shared context, e.g. Modern Greek *o idhios*, Turkish *kendisi*, Marathi *aapaṅ*, Malay *dirinya*.

They form a stringency hierarchy:

(11) The anaphoric domain hierarchy



By separating reflexivity from the more general property of referential dependency, we predict a class of referentially dependent non-reflexive anaphors, with a well-defined profile that is quite distinct from the familiar local and long-distance reflexives, as well as from referentially independent pronominals. This class of anaphors has long been recognized by descriptive grammarians and typologists under the designation DISCOURSE ANAPHORS. The clitic anaphors $\acute{\epsilon}\sigma$, $\acute{\epsilon}$, $\sigma\acute{\iota}$ instantiate it in Greek. BOT offers a way to accommodate this kind of anaphor in binding theory.

BLOCKING dictates the use of the most restricted element available in a given context. The principle of Blocking is not specific to binding theory, but a general principle of grammar (essentially the same as the Elsewhere Condition). For example, anaphors are used in preference to pronominals in contexts where the constraints on both are otherwise satisfied, and anaphors which require clausal antecedents are used in preference to anaphors which permit long-distance antecedents in contexts where the constraints on both are otherwise satisfied. Burzio (1996, 1998) was the first to build Blocking explicitly into binding theory in order to account for the (quasi-)complementarity between anaphors and pronominals. Other, conceptually different approaches to anaphor/pronominal complementarity are the “obligatory reflexivization” transformation of Lees and Klima 1963, and R&R’s principle that when a chain that licenses a reflexive can be formed, it must be, because it is more economical.

Within GB-style binding theories, extending and parametrizing the syntactic binding domain is not very attractive because it creates an arbitrary asymmetry between Principle A and Principle B. Why should anaphors have expanded binding domains, when pronominals do not (Cole, Hermon & Huang 2006: 49-50)? BOT is not subject to this objection, for in this approach only anaphors *have* a syntactic binding domain, and there is no Principle B. The work that Principle B does in other theories is apportioned between Blocking and the OBVIATION constraint, neither of which can, for principled reasons, have a parametrizable domain.

Obviation requires coarguments to have disjoint reference (Hellan 1988, 1990, Dalrymple 1993).

(12) *Obviation*

A pronoun marked as obviative cannot overlap in reference with a coargument.

Obviation is defined over the invariant *semantic* domain where argument structure is represented, and it does not restrict the syntactic distribution of pronouns but their semantic interpretation. Thus, it enforces disjoint reference in (13a) and (13b), and the collective reading of the plural in (13c) and the conjunct in (13d).

- (13) a. John hates him. (there must be two people involved)
b. Each of the men hate him. (“he” isn’t one of “the men”)
c. I like us. (“we” must form a unit of some kind)
d. I like me and him. (e.g. as a couple, or a team)

In Homeric Greek as well, it is the collective reading of the conjunction that licenses the bare reflexive in a case like (14a). As the context indicates, the shame is supposed to fall collectively on the women. Our analysis predicts that this is the only interpretation of the sentence. Swedish allows *sig* in analogous cases, contrast (14b) with (14c).

- (14) a. οἱ τε κατ' αἴσχος ἔχευε καὶ ἐσσομένησιν ὀπίσω θηλυτέρησι
Refl-DAT and down shame-ACC pour-AOR3SG and to be-PLDAT hereafter female-PLDAT
γυναιξί Od. 11.432-4
women-PLDAT
she has shed shame on herself and on women yet to be
- b. Han_i berättade om sig_i och sitt företag. Swedish
He told about himself and his business.
- c. *Han_i berättade om sig_i. (OK: om sig_i själv) Swedish
He told about himself.

R&R’s (1993) Condition B also applies to semantic predicates, in a technically and conceptually different way.

Lexical items, though, *can* be parametrically specified for whether they trigger Obviation. I’ll assume that [+Obviative] is the default and that pronouns (both pronominals and anaphors) as well as verbal predicates may be lexically marked as [–Obviative], meaning that their coarguments may overlap in reference. The cross-classification of obviation and the antecedent domain specification for pronouns makes two important predictions. First, it predicts the existence of a class of obviative reflexives, i.e. reflexives that are subject to a disjoint reference requirement (e.g. Swedish *sig*, Dutch *zich*, and Homeric accented ἑ-), beside the unsurprising non-obviative reflexives (such as German *sich* and Classical Greek ἑαυτόν). Secondly, it predicts non-obviative pronominals (e.g. Old English *him*, Malay *dirinya*, Turkish *kendisi*), beside the unsurprising obviative ones (English *him*, Classical Greek μιν).

For example, German *sich* is [–Obviative], whereas Dutch *zich* is [+Obviative]:

- (15) a. Jan bewundert/hasst sich. ‘Jan admires/hates himself’ German
b. *Jan bewondert/haat zich. Dutch

And Old English *hine*, *him* was [–Obviative], whereas Modern English *him* is [+Obviative]; contrast (36a) and (36b):

- (16) a. þætte nænig biscopa hine oðrum forbære Old English (*Bede* 5.278.27)
 that no bishop him others-DAT advance-SUBJ-3P
 ‘that no bishop shall put himself above others’
 b. *No bishop_i shall put him_i above others’

Obviation cross-classifies with the antecedent domain hierarchy.

- (17) a.

<i>himself</i>	Russ. <i>sebj</i>	Malay <i>dirinya</i>	—
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Non-obviative
- b.

German <i>sich</i>	Sw. <i>sig</i>	Gk. <i>o idhios</i>	<i>him</i>
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Obviative

Are there deeper principles that derive the parameter settings from some independent properties of pronouns, rather than lexically stipulating them? For phrasal anaphors and transparently compounded anaphors, there are. Elements such as *self*, αὐτό- are [-Obviative] markers that pass their feature to the complex reflexives they form. These are actually compositional. Complex reflexives of the form POSS+N (where N = ‘head’, ‘body’ etc.) get around obviation by a kind of syntactic Trojan horse that smuggles in the semantic coargument as a structural possessor. But for simple anaphors, there exist only tendencies that connect the form and function of anaphors (Faltz 1977) but no absolute principles (Huang 2000), and the tendencies can be understood as consequences of well-understood historical processes (Kiparsky 2008). As far as I have been able to determine, obviation is an unpredictable lexical property of simple pronouns; attempts to reduce it to ϕ -feature composition, to morphological or phonological properties, or to any parameter of the language at large, are unlikely to succeed, as I will argue further in section 4. It is true that long-distance reflexives are typically monomorphemic and have a reduced set of morphosyntactic feature specifications, but as we have just seen, Classical Greek ἐαυτό- is a clear example of a long-distance reflexive that is bimorphemic and inflects for all morphosyntactic features of the nominal system. The rise of Homeric phrasal ἐὲ αὐτόν and its transition to the classical single-word ἐαυτόν neatly demonstrates both the diachronic origin of the correlation, and its breakdown: the characteristic trajectory is that complex reflexives arise as strategies for defeating the obviation of the pronouns they come from, but when their compositionality is lost they may begin to act like simple intrinsically non-obviative reflexives.

One might object on conceptual grounds to a theory in which the near-complementarity of pronominals and anaphors is derived from the interaction of two distinct theoretical principles, Blocking and Obviation. In fact, this is a virtue of the analysis because it explains where the complementarity fails. As an illustration of the independence and interaction of blocking and obviation in English, consider (18) and (19). In (18), Blocking is required to exclude the ungrammatical sentences, for obviation is inapplicable because there is no coargument relation. For example, in (18a), *I* and *me* are not coarguments, so the reason **me* is excluded must be because it is pre-empted by *myself*.

- (18) a. I believe $\left\{ \begin{array}{l} *me \\ myself \end{array} \right\}$ to have been cheated.
 b. Richard_i seems innocent to $\left\{ \begin{array}{l} *him_i \\ himself \end{array} \right\}$.

- c. You praise everyone except $\left\{ \begin{array}{l} *you \\ *yourself \end{array} \right\}$.

As for Obviation, we have already seen that it is independently necessary for the semantics of sentences like (13). This leads to the interesting prediction that *neither* the reflexive *nor* the pronominal is available in cases like (19). Here **them* cannot be excluded by Blocking because the reflexive *themselves* is not licensed (since split antecedents are excluded for independent reasons), but Obviation correctly rules it out.

- (19) John_i discussed Bill_j with $\left\{ \begin{array}{l} *themselves_{i+j} \\ *them_{i+j} \end{array} \right\}$

If the antecedent of a reflexive is a coargument, the reflexive must be [–Obviative] (proximate), and interpreted as a bound anaphor. Only “sloppy identity” is available in (20).

- (20) John hates himself, and so does Fred.
 = “Fred also hates himself” (sloppy)
 ≠ “Fred also hates John” (strict)

My impression is that this generalization holds for Greek as well, though I have not made a systematic study of the Greek data in this respect. The following example means, and presumably could only mean, that the men also threw themselves down, not that men also threw the women down (“sloppy” rather than “strict” identity).

- (21) αἱ γὰρ γυναῖκες [...] ἑαυτὰς ἐπιχατερρίπτουν, καὶ
 the-PLNOM Prt women-PLNOM [...] themselves-FPLACC threw-down-IMPF3PL and
 οἱ ἄνδρες ὡσαύτως Xen. *Anab.* 4.7.13
 the-PLNOM men-PLNOM likewise
 the women threw themselves down, and the men did likewise.

If the antecedent is not a coargument, however, the strict reading is available, in English. Since coargument disjoint reference is universal, BOT predicts the same for Greek. predict the same for

- (22) a. John considers himself competent, and so does Fred. (ambiguous)
 b. John has a picture of himself, and so does Fred. (ambiguous)
 c. Mary quoted every author except herself, and so did Bill. (ambiguous)

To repeat: obviation applies in a semantic domain (coarguments) and constrains semantic interpretation, whereas Blocking applies in a syntactic domain and constrains syntactic representation. And the two principles apply to different classes of elements, interacting with each other and with other constraints.

Descriptively speaking, the strength of blocking decreases with the size of the domain. In long-distance domains, variation between reflexive and non-reflexive is observed in Swedish, Icelandic, Latin, Czech, Russian, and Chinese, as documented in Kiparsky 2002. The right way to think of this variation is probably that it is caused by the interference of other factors. In her study of Herodotus’ use of ἑωυτόν, Peels (2007, Ch. 3) makes a good case that non-reflexives in cases where long-distance reflexives are allowed (e.g. (7d,e)) are due to such factors as speaker perspective, intervention of other subjects (as in Chinese, see Cole et al. 2006), and the avoidance of ambiguity.

We are now ready to spell out the Greek systems of anaphora.

(23) Homeric

- a. $\xi\omicron, \xi\acute{\iota}, \omicron\acute{\iota}$ must be bound within their finite clause.
- b. $\xi\omicron, \xi\acute{\iota}, \omicron\acute{\iota}$ and the personal pronouns are [+Obviative].
- c. $\alpha\upsilon\tau\acute{o}-$ is [-Obviative]. Adding it to $\xi\omicron, \xi\acute{\iota}, \omicron\acute{\iota}$ and the 1/2. person pronouns enables them to have coargument antecedents.
- d. Unaccented $\xi\omicron, \xi\acute{\iota}, \omicron\acute{\iota}$ are non-reflexive referentially dependent pronouns.

(24) Homeric	Domain	Obviation
$\xi-$	Discourse	+
$\xi-$	Finite	+
$\xi\mu\acute{\epsilon}$	_____	+
$\alpha\upsilon\tau\acute{o}-$	_____	-

(25) Classical Greek

- a. $\xi\alpha\upsilon\tau\acute{o}-$ is non-obviative and must be bound within its finite clause.
- b. $\xi\mu\alpha\upsilon\tau\acute{o}-, \sigma\epsilon\alpha\upsilon\tau\acute{o}$ are non-obviative and must be bound within their clause.
- c. $\alpha\upsilon\tau\acute{o}-$ is a [-Obviative] discourse anaphor.

(26) Classical	Domain	Obviation
$\alpha\upsilon\tau\acute{o}-$	Discourse	-
$\xi\alpha\upsilon\tau\acute{o}-$	Finite	-
$\xi\mu\alpha\upsilon\tau\acute{o}-$	Clause	-
$\xi\mu\acute{\epsilon}$	_____	+

3 Reinhart & Reuland

3.1 RT basics

Reinhart and Reuland (1993) put forward a sparser typology, with two types of anaphors: SELF-anaphors, which bear the features [+SELF, -R], such as English *himself*, and SE-anaphors, which bear the features [-SELF, -R], such as Swedish *sig*. Pronominals and referential NPs are [-SELF, +R]. (Keep in mind that they use the terms ‘pronoun’ and ‘pronominal’ as synonymous terms for referentially independent expressions.)

(27)	SELF	SE	Pronominal
Reflexivizing function	+	-	-
R(eferential independence)	-	-	+

R&R propose that the distribution of anaphors and pronominals is jointly governed by a pair of conditions on the relation between the reflexivity of a predicate (defined in terms of argument coindexation) and its formal marking on the predicate, and by a syntactic condition on A-CHAINS (links between anaphors and their antecedents). The conditions on the relation between reflexivity and reflexive-marking are reproduced in (28):

- (28) a. Condition A: A reflexive-marked syntactic predicate is reflexive.
- b. Condition B: A reflexive semantic predicate is reflexive-marked.

The definitions in (29) tell us what they mean.

(29) Definitions

- a. The SYNTACTIC PREDICATE formed of (a head) P is P, all its syntactic arguments, and an external argument of P (subject).
- b. The SYNTACTIC ARGUMENTS of P are the projections assigned θ -role or Case by P.
- c. The SEMANTIC PREDICATE formed of P is P and all its arguments at the relevant semantic level.
- d. A predicate is REFLEXIVE iff two of its arguments are coindexed.
- e. A predicate (formed of P) is REFLEXIVE-MARKED iff either P is lexically reflexive or one of P's arguments is a SELF anaphor (defined as “an anaphor that is able to reflexivize a predicate”).

SE-anaphors are pronouns, while SELF anaphors are DPs. The SELF contained in complex reflexives is an identity predicate of category N, which combines with a determiner (pronominal or SE) into a referentially dependent DP. SELF “reflexive-marks” the predicate of which it is a syntactic argument, by covertly adjoining to its head and restricting its interpretation.

Long-distance anaphora is licensed by syntactic chains — A-chains — that connect an anaphor to its antecedent. Configurational effects on anaphor binding derive from constraints on A-chain formation. A-chain can cross non-finite clause boundaries, but not finite clause boundaries. Anaphors may appear outside A-chains, but in that case they are subject only to discourse factors, in particular to those governing their logophoric uses.

- (30)
- a. A maximal A-chain $(\alpha_1, \dots, \alpha_n)$ contains exactly one link — α_1 — that is both +R and Case-marked, and exactly one θ -marked link. (RR 698)
 - b. An NP is +R (Referentially independent) iff it is fully specified for ϕ -features.

(30b) implies that whether a pronoun is an anaphor or a pronominal is predictable from its morphosyntactic feature composition. If it is specified for a restricted set of morphosyntactic features (ϕ -features), it is anaphoric, because it cannot project an independently interpretable argument. Specifically, a SE-anaphor is a featurally deficient determiner, which like ordinary pronouns occupies the head position of a DP. It is deficient if it lacks at least number and gender, and it may also lack person and/or case. Although it cannot project an independently interpretable argument, it is still a syntactic argument, since it is a pronoun, and therefore falls under Condition B.

3.2 RT on Greek

Let us consider what RT would say about the individual Greek anaphors discussed in the previous section. The compound reflexives $\acute{\epsilon}\alpha\upsilon\tau\acute{o}$ -, $\acute{\epsilon}\mu\alpha\upsilon\tau\acute{o}$ -, $\sigma\epsilon\alpha\upsilon\tau\acute{o}$ - of post-Homeric Greek are anaphors, but what kind? On the one hand, RT tells us that the complex reflexives are SELF-anaphors, for they are morphologically complex, they bear the ϕ -features of person, gender, number, and case, and they are not subject to condition B, and do not need strengthening by a SELF-element. On the other hand, the theory also says that the complex reflexives are SE-anaphors, for they are subject-oriented, occur in adjuncts and other non-coargument positions, and function as long-distance anaphors. But the theory is so constructed that no pronoun can be both a SELF-anaphor and a SE-anaphor, for the two categories have incompatible properties. The categorial distinction between them cannot be neutralized in a single lexeme. A given reflexive either has the required ϕ -features or it doesn't have them, and it is either a determiner or a full DP. So RT ends

up having to claim that the compound reflexives ἐαυτό-, ἐμαυτό-, σεαυτό- of post-Homeric Greek are two sets of homonymous pronouns.

Next, what about the Homeric Greek bare reflexives ἔο, ἔ, οἶ? They are specified for number, person, and structural case, but not for gender. Thus, they do not meet the criteria for defectivity either, because they bear at least one ϕ -feature that SE-anaphors are not supposed to have. In fact, the bare reflexives are specified for the same features as the first and second person pronouns, which certainly *can* project independent arguments. And the bare reflexives are morphologically identical with the third person non-reflexive pronouns, which also project independent arguments. So it is hard to see how the third person bare reflexives could be morphologically too impoverished to project independent arguments.

R&R (1995) further suggest that *phonological* defectiveness — in particular the lack of stress or of stressability — also causes a pronoun to be anaphoric. They hypothesize that even simple reflexives are somehow like SELF reflexives if they are stressable, noting that German *sich* is stressable and that it can refer to a coargument without being strengthened by a SELF element, in contrast to Dutch *zich* and Scandinavian *sig*, which are neither stressable nor can refer by themselves to a coargument. But for Greek, the accentual criterion goes in the wrong direction. It is the *accented* bare reflexive ἔ- functions as a SE-reflexive, while its unaccented clitic counterpart functions as a discourse anaphor (which would have to be treated as a pronominal in RT). So, within Greek, neither ϕ -feature composition, nor stress, or stressability, can be the criterial difference between SELF-reflexives, SE-reflexives, and pronominals.

What does RT have to say about the unaccented clitic ἔο, ἔ, οἶ? It is certainly referentially dependent, in that it cannot be used deictically, nor head restrictive relative clauses, or introduce new discourse topics in any other way. But unlike reflexives, it does not need an antecedent, not even a long-distance one. In principle, it could refer to something not mentioned that is unambiguously clear from the context. Pronouns of this type, DISCOURSE ANAPHORS, are extremely common; in fact, English *it* has the same properties, unlike the gendered pronouns *him* and *her*. Note that they are not necessarily “unstressable”: *it* can get contrastive stress under focus, and apparently so can the discourse anaphors in Homer; the accent on οἶ in (31) must be contrastive, for it is not a reflexive since it does not have a subject antecedent:

- (31) οὐνεκα οἶ πρωτέρη δῶκε χρύσειον ἄλειςον *Od.* 3.53
 because her-DAT first gave-AOR3SG golden-ACC cup-ACC
 [But Athena rejoiced at the wise and just man,] because he gave the golden cup to *her*
 first [rather than to someone else]

To answer this question we will need to take a closer look at the discourse anaphors. In the next section we do this by turning to the 3Sg. object clitic μιν.

4 Referentially dependent non-reflexive pronouns

4.1 Greek μιν

In early Greek, Plural σφέων, σφίσι, σφέας (σφᾶς), and the 3Sg. object pronoun μιν function as discourse anaphors, and also as reflexives, duly reinforced with αὐτό- when locally bound to a coargument. We will focus on μιν, which is a gender-neutral accusative singular clitic. Pl.Acc. σφεας can be considered its plural counterpart and works in a similar way; the following argumentation could be essentially replicated for this pronoun. μιν is rare in Homeric, but (32a) illustrates its local reflexive use with αὐτό-, and (32b) illustrates how μιν serves by itself as a discourse anaphor.

- (32) a. αὐτόν μιν πληγῆσιν ἀεικελίησι δαμάσσας *Od.* 4.244
 self-ACC him-ACC blow-PLDAT cruel-PLDAT overpower-PART

disfiguring himself with cruel blows

- b. πρίν μιν καὶ γῆρας ἔπεισιν *Il.* 1.29
before her also old age overtake-3SG
[I will not set her free.] Sooner shall old age come upon her.

Note in (32a) that μιν follows αὐτό-, which is the reverse order from that of the other complex reflexives. The reason is that μιν is always clitic and must lean on something to its left.

μιν is common in the Ionic dialect of Herodotus, which represents in some ways an intermediate stage between Homeric and the classical language. Its range of uses are illustrated in (33)-(35).

(33) μιν as a local reflexive, coargument antecedent

- a. κελεύειν τοὺς πορθμέας [...] αὐτόν διαχρᾶσθαί μιν *Hdt.* 1.24.3
order-INF the-ACC sailors-PLACC [...] self-ACC kill-INF him-ACC
the crew told him to kill himself
- b. αὐτήν μιν [...] ῥίψαι ἐς οἶκημα σποδοῦ πλέον *Hdt.* 2.100.4
self.F-ACC [...] throw-INF into room-ACC ashes-GEN full-ACC
[The priests told of her that when she had done this] she threw herself into a room full of hot ashes
- c. ῥίψαί μιν ἐς τὴν θάλασσαν ἑωυτόν *Hdt.* 1.24.5
throw-AORINF him the-ACC sea-ACC himself-ACC
he threw himself into the sea

In (33a) and (33b), μιν is strengthened by αὐτόν, which is the usual anti-obviation predicate. In (33c), though, it is strengthened not by αὐτόν but by ἑωυτόν. I conjecture that the reason is that αὐτό- was in the process of losing its function as an anti-obviation at this time, since the phrasal reflexives had been fused in the singular into inherently [-Obviative] complex reflexives, requiring no further strengthening.

(34) μιν as a long-distance reflexive

- a. ἰκέτευε μὴ μιν ἀναγκαίῃ ἐνδέειν διακρῖναι τοιαύτην αἵρεσιν
beg-IMP3SG not him-ACC compulsion-DAT put-INF choose-INF such-ACC choice-ACC
he begged her not to compel him to such a choice *Hdt.* 1.11.4
- b. συνειῖσα οὐκ αὐτήν μιν μνώμενον *Hdt.* 1.205.1
understand.F-PART not her-ACC him-ACC want-PART
[Cyrus proposed to queen Tomyris, but she,] understanding that he [...] wanted not her [but her kingdom, refused]

(35) μιν as a discourse anaphor

- a. τῶν μὲν δὴ οὐδὲν προσίετό μιν *Hdt.* 1.48.1
them-GEN Prt Prt not one satisfy-Pst3SG him-ACC.
[Croesus examined all the writings.] None of them satisfied him.
- b. ἡ γυνὴ ἐπορᾷ μιν ἐξιόντα *Hdt.* 1.10.2
the woman notice-3SG him-ACC exit-PART-ACC
[Gyges sneaked out of the room.] The woman caught sight of him as he went out.

After Herodotus, the non-reflexive uses of the plural $\sigma\phi\acute{\epsilon}\omega\nu$, $\sigma\phi\acute{\iota}\sigma\iota$, $\sigma\phi\tilde{\alpha}\zeta$ are lost, and $\mu\iota\nu$ disappears entirely.

In terms of our parametric approach, $\mu\iota\nu$ must be a non-reflexive referentially dependent pronoun — a discourse anaphor. The relevant parameter specification for anaphors only fixes the *upper* bound of the domain in which the reference of the must be identified. The setting for $\mu\iota\nu$ merely says that it must get its reference within the discourse. Nothing precludes it from having a local or long-distance antecedent within a subpart of the discourse. The theory does not allow imposing a lower syntactic bound on the distance between antecedent and anaphor. A lower bound emerges through competition with other anaphors. In general, when discourse anaphors serve as reflexives, it is only when they are not blocked by another anaphor. For example, a discourse anaphor will be blocked in those domains where a more restricted anaphors that require an antecedent within the clausal or finite domain is available; thus *it* does not occur in environments where *itself* is permitted. There are essentially two ways in which a discourse anaphor can function as a reflexive.

The more obvious way for there to be no blocking is when there is no competing more restricted anaphor in the language. So, in languages without reflexives, non-obviative discourse anaphors can fill in for them, and function effectively as reflexives. This is what happens in languages whose pronouns are built on the opposition between proximate and obviative pronouns (rather than on the opposition between pronominals and anaphors). These famously include Algonquian (for a BOT analysis, based on Grafstein 1988, 1999, see Kiparsky 2002). What Cole et al. (2006) call “pronominal long-distance reflexives” (such as Malay *dirinya* and Turkish *kendisi*), which lack logophoric conditions, as they point out, are from this perspective really [–Obviative] discourse anaphors. Less exotically, this is what happens in those Germanic languages that lost their inherited reflexive *sig*-pronoun, notably Old English, Frisian, and early Dutch.

- (36) a. & he hine & his ðeode gelædde to mærsianne Old English (*Bede* 5 19.468.7)
 and he him and his people brought to celebrate
 and he brought himself and his people to celebrate
- b. þonne wolde heo ealra nyhst hy baþian & þwean Old English (*Bede* 4 19.318.20)
 then would she of all latest her bathe and wash
 [having first washed the other servants of Christ that were there] then she would last of
 all bathe and wash herself
- c. Marie_i wasket har_i Frisian
 Marie_i washe her_i
 ‘Marie washes herself’

The second way in which blocking can fail is when the discourse anaphor successfully competes with a more restrictive reflexive on the basis of another advantage that it has over it. Specifically, a discourse anaphor which is morphologically underspecified or which is a clitic can be preferred over a more restricted reflexive anaphor for reasons of economy. This is an instance of the pervasive tension between feature subsumption (preference for the more highly specified form) and economy (preference for the simpler form), which underlies much grammatical variation.³ In Kiparsky 2005 I model its dynamics in OT and provide examples of it from several languages. Feature subsumption and economy are there formalized in the obvious way as FAITHFULNESS and MARKEDNESS constraints, respectively.

³For example, in Sanskrit, the first and second person plural clitic pronouns *nas*, *vas*, which suppress the distinction between accusative, dative, and genitive case, coexist with their more complex orthotonic counterparts *asmān*, *asmābhis*, *asmākam*, *yusmān*, *yusmābhis*, *yusmākam*, which express those case distinctions.

The variation between the clitic $\mu\nu$ and the orthotonic reflexives in local domains is a classic instance of such variation between a simpler underspecified form and a more complex fully specified form.

How would RT deal with $\mu\nu$? Previous RT analyses of similar situations where discourse anaphors are also used reflexively have explored a variety of solutions. We cannot appeal to ϕ -feature deficiency, since $\mu\nu$ bears number, person, and case. Could we exploit its isolated nature in the pronominal paradigm — the lack of a matching dative, for example — and posit that feature values which are not contrastive in some sense don't count? That seems out of the question because $\mu\nu$ *must* count as positively specified for accusative case, third person, and singular number, simply in order to be restricted to the right referents and the right syntactic contexts. For example, it does not occur as a dative object, it cannot have a plural antecedent, and it cannot have a first and second person antecedent.

Another way out would be to suppose that accusative case on objects in Greek is not a structural case, as Reuland and Reinhart 1995 propose for Frisian, and Reuland and Everaert 2010 for Old English (dubiously, as we shall see in a moment). It seems clear that this is not a viable analysis, since the Greek accusative has all the hallmarks of a structural case, including replacement by nominative case under passivization.

Nor can the lack of accent or the clitic status of $\mu\nu$ be made responsible for its referential dependency, for Greek has a very full set of inherently unaccented clitic pronouns that *must* count as pronominals in RT.

In section 5 I show that its discourse anaphoric uses cannot be explained away as logophoric either, because they have none of the defining characteristics of logophors.

Apart from the empirical and technical difficulties that these analyses face, they are unsatisfactory for two general reasons. First, they end up splitting $\mu\nu$ into two or even three different homonyms, without any independent evidence in the language. Secondly, they fail to provide a unified analysis for the remarkably uniform and orderly behavior of discourse anaphors across languages.

4.2 Parallels

To appreciate the typological parallels, and the full extent of the damage that RT does to the analysis of them, let us briefly review the discourse anaphors that are analogous to $\mu\nu$ in the other languages mentioned. For the Old English case in (36), RT suppose that it has “the parametrically fixed property of no structural case for the object”, so that its pronouns do not have the full set of ϕ -features, and are hence referentially dependent. But the assumption that Old English lacks structural case is quite implausible, since it has the same four-case system as German, whose accusative and nominative cases are certainly structural (as Reuland and Reinhart 1995: 251 themselves note), and for that matter the same case system as Greek. Like German, Old English has a lexically marked class of verbs whose objects bear inherent case, which is retained under NP-movement processes, but apart from these, verbs assign structural accusative case to their nominal and pronominal objects, which is replaced by nominative case in passives (Fischer 1992, Denison 1993: 104, Fischer et al. 2000). This is a standard diagnostic for structural case. In support of their claim that Old English had no structural case, Reuland and Everaert cite van Gelderen (2000), who however offers no evidence for it. Her suggestion that all passives in Old English might be adjectival, and that their agent phrases might really be instrumental is refuted by every page of Old English prose. True verbal passives with promoted nominative subjects and specified human agents are frequent in the texts from the entire OE period, their eventive character diagnosed by adjuncts that are incompatible with non-eventive readings, such as manner adverbs (37a), temporal adverbs that locate the event at a point or interval of time or specify its duration (37b), locatives

(37c), true agentive phrases (37d), and simply by contextual plausibility (37e).

- (37) a. Manner adverbs: *Hit wæs ðá swá gedón* ‘it was then done so’ *Gen.* 1, 9, 15
b. Temporal and frame adverbs: *ær þam ðe Romeburg getimbred wære syx hund wintran 7 fif, in Egyptum wearð on anre niht fiftig manna ofslegen, ealle fram hiora agnum sunum* ‘six hundred and five winters before Rome was built, fifty men were killed in one night in Egypt, all by their own sons’ *Orosius* 40.11
c. Locative adverbs: *Hugo eorl wearþ ofslegen innan Angles ége* ‘Earl Hugo was slain in Anglesey’, *Anglo-Saxon Chronicle* 1098
d. Agent phrases: *Wearþ Rómeburg getimbred fram twám gebróðrum* ‘Rome was built by two brothers’, *Orosius* 2, 2
e. Common sense: *Wearð his hors ofslegen þe hé on sæt* ‘the horse that he was riding on was killed’ (*Chr.* 1079). A non-eventive, adjectival reading would mean that he was riding a dead horse.

Reuland & Reinhart 1995 make a somewhat similar claim for Frisian, where pronominals like *him* ‘him’ and *har* ‘her’ can be used reflexively, so that (38b) is ambiguous.

- (38) Marie_i(F.) wasket har_{i,j}.
Marie_i washes herself/her.

Compared to German and Old English, Frisian has a reduced Case system, in fact so reduced that the problem becomes not so much motivating the absence of structural Case as the presence of inherent Case. R&R’s argument rests on a contrast between two object pronouns in the third person feminine singular (*har* vs. *se*) and third person plural (*har*, *harren* vs. *se*). *Se* differs from *har* (and from other pronouns, such as *him*) in that it cannot be locally bound:

- (39) Marie_i wasket harsels_i/har_{i,j}/se*_{i,j}
Marie_i washes herself/her/her

As ordinary objects with disjoint reference, both *se* and *har* are allowed (examples from the internet).

- (40) mar hy seach **har** net en groete **har** ek net.
but he saw her not and greeted her also not
but he did not see her and did not greet her

hy miende wol dat hy **se** mei nommen hie, ... mar hy seach **se** net
he remembered well that he them with taken had, ... but he saw them not
he did remember that he had taken them along, but he did not see them.

Following Hoekstra 1991, R&R base an account of these data on the observation that *se* (unlike *har*, *him*, etc.) cannot occur in free datives or in locative PPs, a distributional restriction which they attribute to a requirement for *se* to receive structural Case under government by a lexical projection. They further posit that *har* and *him* can *only* get inherent Case, that Frisian has a subsystem of inherent Case with only one member, and that a pronoun object bearing an inherent case of this kind is ϕ -defective, and bears the feature [–R], i.e. is referentially dependent as a result of which reflexive uses of *har* are possible.

But *har* and the other personal pronouns also have a pronominal use, with disjoint reference with respect to the subject (as in (40a)), in which case they cannot be ϕ -defective, hence cannot bear inherent Case. Thus R&R analysis entails that Frisian object pronouns (other than *se*) are systematically ambiguous, bearing either the language’s sole putative inherent Case, or a morphologically identical accusative case which is structural, hence not retained under passivization: ‘he was called X’ is *hy wurdt X neamd* (and not **him wurdt X neamd*). This seems a high price to pay for saving RT in the face of the Frisian data. In general, then, RT forces us to posit massive homonymy between reflexive and referentially independent pronouns, even when they are in every respect identical.

A simpler explanation for the distribution of Frisian *se* is based on the fact that it is unaccented, unlike *har* and *him* (Sipma 1913: 66, Tiersma 1985: 65). If we suppose that because *se* is unaccented it must lean enclitically on a lexical word to its left, which for syntactic reasons can only be the verb or adjective that governs it, then it follows that it cannot stand as a bare dative, or be governed by a preposition. In short, instead of hypothesizing an otherwise unmotivated inherent Case for Frisian, and positing morphosyntactically defective twins for most of its pronouns (such as *har*, *him*, etc.), we can derive the distribution of *se* from the fact that it is phonologically weak. The special behavior of *se* among Frisian pronouns turns out to be an instance of the generalization that the clitic forms of pronouns are obviative, hence not used reflexively, which we have already seen in Greek.⁴

In a response to criticism by Evans & Levinson (2009), Reuland & Everaert (2010) have further clarified the RT treatment of languages without reflexive pronouns by proposing an analysis of Fijian, where “in the third person, a verb with the transitive marker *-a* and without an explicit object is interpreted as having unmarked reference to a third-singular object which is noncoreferential with the subject. If coreference or reflexivity is intended, a full object pronoun (e.g. *'ea*, third-singular object) is required, and although this might be interpreted disjointedly, it encourages a coreferential reading” (Dixon 1988, 256).

- (41) a. sa va'a-dodonu-ta.'ini' o Mika_i
 ASP correct Art Mike
 ‘Mike corrected him’ (*himself)
- b. sa va'a-dodonu-ta.'ini' 'ea_{i,j} o Mika_i
 ASP correct 3sg+Obj Art Mike
 ‘Mike corrected himself’ (preferred) or ‘Mike corrected him’

R&E’s idea is that Fijian licenses the reflexive interpretation of the overt pronoun in (41a) by a “doubling” procedure, involving the adjunction of the full pronoun *'ea* to a covert null pronoun; the structure of (41a) would then really be as shown in (42):

- (42) sa va'a-dodonu-ta.'ini' [\emptyset 'ea]_{DP} o Mika
 ASP correct 3sg+Obj 3sg+Obj Art Mike
 ‘Mike corrected himself’

The RT analysis again comes at a price: once covert doubling of pronouns is allowed, then additional constraints must rule out the ungrammatical combinations in (43), and the typology predicted by the theory expands in unwanted ways.

⁴Actually most Frisian pronouns have unaccented forms, e.g. 2.Sg. *je* [jə], 3.Sg. [əm] (Tiersma 1985: 65); if these have the same clitic status as *se*, the expectation would be that they should have the same kind of distribution.

- (43) a. *sa va'a-.dodonu-.ta'ini' ['ea 'ea]_{DP} o Mika
 ASP correct 3sg+Obj 3sg+Obj Art Mike
 'Mike corrected himself'
- b. *sa va'a-.dodonu-.ta'ini' [∅ ∅]_{DP} o Mika
 ASP correct 3sg+Obj 3sg+Obj Art Mike
 'Mike corrected himself'

From the BOT perspective, Fijian has two vanilla pronouns: (1) an obviative null pronoun (like Spanish \emptyset , and comparable to obviative unaccented or weak pronouns such as Frisian *se*, Greek $\acute{\epsilon}$ -), and (2) non-obviative 'ea, which may be interpreted as coreferential or disjoint (like other accentable pronouns such as Frisian *hem*, Old English *him*, and Greek accented $\acute{\epsilon}$ -). The generalization that weak pronouns are obviative runs through all these systems. The preference for coreferential interpretation of 'ea is expected, though it remains unexplained why the blocking effect is not stronger.

5 Logophoric use of anaphors

The final possibility for accommodating $\mu\nu$ in RT that remains to be examined is that it is a logophor. Almost all anaphors that appear to be bound from outside a finite clause in Greek turn out to be discourse anaphors rather than reflexives: unaccented $\acute{\epsilon}$ - in Homer, and $\alpha\upsilon\tau\acute{o}$ - in the classical language. But in both dialects we do sometimes find reflexives in positions where they have no syntactic antecedent, not even a long-distance one. The theoretical literature on anaphora refers to this special use of reflexives as LOGOPHORIC, co-opting a term originally referring to a distinct class of pronouns attested in some languages that conforms to (44) (from Clements 1975: 171, see also Hagège 1974, Sells 1987, Zribi-Hertz 1989, Sigurdsson 1990, Reuland 2006, Thráinsson 2007).

- (44) a. Logophoric pronouns are restricted to reportive contexts transmitting the words/thoughts of an individual other than the speaker/narrator.
- b. The antecedent is not in the same reportive context as the logophoric pronoun.
- c. The antecedent designates the individual whose words/thoughts are transmitted in the reported context in which the logophoric pronoun occurs.

Such instances of logophoric reflexives as I have found in Homeric Greek have the same properties as the logophoric reflexives reported for modern Icelandic and Faroese by Thráinsson (2007, Ch. 9): non-obligatoriness, non-occurrence in speaker-oriented clauses (e.g. adverbial or adjunct clauses), human antecedents, non-factive predicates of saying and thinking only, and restriction to bare unstrengthened reflexives (that is, Icelandic *sig* and Homeric $\acute{\epsilon}$ -). Whoever wrote down and edited the Homeric MSS (presumably the Alexandrian scholars) understood Homeric grammar well enough to see that they are not simply discourse anaphors but reflexives of a special kind, and took care to put the accent on them that reflexives require.

- (45) a. $\delta\ \delta\ \acute{\Lambda}\chi\alpha\iota\omega\acute{\nu}\ \acute{\alpha}\lambda\lambda\omicron\nu\ \acute{\epsilon}\lambda\acute{\epsilon}\sigma\theta\omega,
 he Prt Achaean-PLGEN other-ACC choose-IMP3SG who ever Refl-DAT and suit-3SG and
 $\delta\varsigma\ \beta\alpha\sigma\iota\lambda\acute{\epsilon}\upsilon\tau\epsilon\rho\acute{\omicron}\varsigma\ \acute{\epsilon}\sigma\tau\iota\nu$ *Il.* 9.392
 who kinglier is
 let him_i [Agamemnon] choose another of the Achaeans who is more suitable to him_i
 and more kingly$

b. πειρήθη δ' ἑο αὐτοῦ ἐν ἔντεσι δῖος Ἀχιλλεύς· εἰ
 test-PASSAOR3SG Prt Refl-GEN self-GEN in armor-PLDAT glorious Achilles whether
 οἷ
 ἐφαρμόσσειε *Il.* 19.384-5
 Refl-DAT fit-AOROPT3SG
 And the noble Achilles tested himself in his armor, whether it fitted him

c. ὅσσοι δ' ὀρμήσειε πυλάων Δαρδανιάων [...] εἴ πως οἷ
 whenever Prt rush-OPT3SG gate-PLGEN Dardanian-PLGEN [...] if how Refl-DAT
 καθύπερθεν ἀλάλκοιεν βελέεσσι *Il.* 22.194-6
 from above defend-AOROPT3PL arrow-PLDAT
 Whenever he would rush straight for the Dardanian gates, [...] hoping they [the Tro-
 jans] might defend him from above with arrows

(45a) could be rendered in English with *himself*. In context, its use is entirely appropriate. The reflexive keeps the relative clause within the scope of the imperative, ensuring its intensional interpretation: Achilles is implying that Agamemnon will find no-one more worthy than him.

Icelandic allows long-distance reflexives whose antecedents are apparently in different sentences (Thrainsson 2007: 472). It occurs in the special type of reported speech known as “free indirect discourse”, which occurs in Classical Greek as well. It is naturally analyzed as subordinated to ellipsed main clauses with a verb of saying or thinking, whose subject is the antecedent of a long-distance reflexive. Here is a characteristic Greek example.

(46) ὡς δὲ αὐτοὶ Ἀθηναῖοι λέγουσι, δικαίως ἐξέλασαι. [...] ἐωυτοὺς δὲ γενέσθαι τοσοῦτω
 ἐκείνων ἄνδρας ἀμείνονας, [...] ταῦτα δὲ Ἀθηναῖοι λέγουσι. *Hdt.* 6.137.3-4
 But the Athenians themselves say that they expelled [the Pelasgians] justly. [The expulsion
 is narrated in a sequence of infinitive clauses.] They (ἐωυτοὺς) were much better men than
 the Pelasgians. [...] That is what the Athenians say. *Hdt.* 6.137.3-4

Each ECM clause comes under the scope of an implicit λέγουσι ‘they say’. Greek seems to do this only with sequences of infinitive clauses, whereas the Icelandic construction involves finite subjunctive clauses. This does not necessarily indicate that Greek and Icelandic anaphors differ with respect to their binding domain; it looks like it has to do with their respective syntax of indirect discourse, perhaps involving different conditions under which ellipsis of the governing predicate is permitted.

Comparison of these logophoric uses of reflexives with the previously described uses of μιν as a discourse anaphor reveals fundamental differences. With μιν there is no explicit or implicit governing predicate of saying or thinking, and the perspective is the narrator’s, not that of someone whose speech or thought is represented. I conclude that μιν is not a reflexive with a logophoric use.

R&R (2006) define the category of FOCUS LOGOPHOR as a discourse anaphor that marks focus or emphasis. It shares with other logophors the negative property that it does not stand in a syntactic relationship to an antecedent, but unlike them it is complex (obviative), e.g. *himself*, German *sich selbst*, and is available only in configurations where chain formation is structurally licensed. (47) illustrates this type in classical Greek.

(47) a. [Κροῖσος] ἠρώτησε δὲ τὸν Σόλωνα τίνα τῶν ὄντων εὐδαιμονέστατον ἐώρακεν, ὡς
 τοῦτό γε πάντως ἀποδοθησόμενον ἑαυτῷ. Diodorus Siculus 9.27.1
 And he_i [Croesus] asked Solon_j who of all living beings he_j found most fortunate,
 thinking that he_j would in any case award this to himself_i.

- b. [Κροΐσος_i] ἔλεγε [...] ὡς τε αὐτῷ_i πάντα ἀποβεβήκοι τῇ περ ἐκεῖνος_j [ὁ Σόλων] εἶπε, οὐδέν τι μᾶλλον ἐς ἑωυτὸν_i λέγων ἢ οὐκ ἐς ἅπαν τὸ ἀνθρώπινον *Hdt.* 1.86.6
[Croesus] said [...] that everything had turned out for him [Croesus] as he [Solon] had said, speaking no more of himself [Croesus] than of every human being.

The subject of the participial phrases ἀποδοθησόμενον in (47a) and λέγων in (47b) is *Solon*. An unintended local binding relation is available in each case: in (47a), that Croesus expects Solon to nominate himself (Solon) as the most fortunate creature, rather than Croesus himself (the intended meaning), and in (47b), that Croesus said that Solon was not speaking of himself (Solon), rather than that Solon was not speaking of Croesus himself (the intended meaning). These sentences illustrate R&R's insightful observation that a "focus logophoric" interpretation can successfully compete with syntactic binding, as is indeed confirmed by the English translations, where *himself* is quite idiomatic. As far as I know, μιν is never used as a focus logophor either.

As an aside, it is worth noting that Herodotus has several instances of reflexives in finite complement clauses headed by ὅπως, expressing the intended goal of the event denoted by the main clause (Powell 1933: 217), such as (48):

- (48) a. ποιέων ἅπαντα ὅπως αἱ Ἀθῆναι γηνοίατο ὑπ' ἑωυτῷ τε καὶ
do-PART all-ACC to the-PL Athens-PL become-AOROPT3PL under Refl-DAT and also
Δαρείῳ *Hdt.* 5.96.1
Darius-DAT
doing all he_i could to subjugate Athens to himself_i and to Darius
- b. ἐβουλεύετο ὅπως [...] ἑωυτοῦ τὸ ἔργον ἔσται *Hdt.* 3.154.1
plan-IMPERF3SG to [...] Refl-GEN the accomplishment be-FUT3SG
he planned for the accomplishment to be his own
- c. κατ' ὀλιγαρχίαν δὲ σφίσιν αὐτοῖς μόνον ἐπιτηδεύωσ ὅπως πολιτεύσουσι
for oligarchy-ACC Prt Refl-PLDAT self-PLDAT only for to live-FUT3PL
θεραπεύοντες *Thuc.* 1.19.1
serve.PART-PL
only to make them_i subservient to them_j by establishing oligarchies among them_j

These seem borderline cases between long-distance anaphora and focus logophora; if they are the former, they would be the only finite clauses in all of the work of these authors out of which reflexives can be bound. Either way, it is not clear why they are so common in just this type of clause.

In any case, comparison of the logophoric use of reflexives with the discourse anaphoric uses of μιν immediately shows that they have nothing in common. Non-reflexive μιν cannot be explained away as a logophor.

This completes our argument. The bottom line is that Greek joins Old English, Frisian, Fijian, Turkish, and Malay in attesting a class of true anaphors distinct both from reflexives and from pronominals, whose characteristic is that they may but need not have a structural antecedent. This class of anaphors requires an extension of binding theory, if not along the lines of BOT, then to something that equals and hopefully exceeds BOT's empirical coverage.

Bibliography

- BURZIO, LUIGI. 1996. The role of the antecedent in anaphoric relations. In R. Freidin (ed.) *Current issues in comparative grammar*. Dordrecht: Kluwer.
- BURZIO, LUIGI. 1998. Anaphora and soft constraints. In Pilar Barbosa, Danny Fox, Paul Hagstrom, Martha McGinnis, and David Pesetsky (ed.) *Is the best good enough? Optimality and competition in syntax*. Cambridge, Mass.: MIT Press.
- BURZIO, LUIGI. 2010. Constraint violability and the Chain Condition. To appear in *Revista Virtual de Estudos da Linguagem*.
<http://web.jhu.edu/bin/o/u/Constraints%20and%20Chain%20Con.pdf>
- CLEMENTS, GEORGE N. 1975. The logophoric pronoun in Ewe: its role in discourse. *Journal of West African Languages* 10, 141-177.
- COLE, PETER, GABRIELLA HERMON, AND LI-MAY SUNG. 1990. Principles and parameters of long-distance reflexives. *Linguistic Inquiry* 21, 1-22.
- COLE, PETER, GABRIELLA HERMON, AND C.-T. JAMES HUANG. 2006. Long-distance binding in Asian languages. In Martin Everaert & Henk van Riemsdijk, eds. *The Blackwell companion to Syntax*, Volume III. Malden, MA: Blackwell Publishing, 21-84.
- DAHL, ÖSTEN. 1973. On so-called “sloppy identity”. *Synthese* 26: 81-112.
- DALRYMPLE, MARY. 1993. *The syntax of anaphoric binding*. Stanford: CSLI.
- EVANS, N. & S. LEVINSON. 2009. The myth of language universals: language diversity and its importance for cognitive science. *Behavioral and Brain Sciences* 32, 429-492.
- FALTZ, LEONARD M. 1977. *Reflexivization: a study in universal syntax*. U.C. Berkeley Dissertation. Reprinted 1985, Garland, New York.
- DENISON, DAVID. 1993. *English historical syntax: verbal constructions*. London/New York: Longman.
- FISCHER, OLGA, A. VAN KEMENADE, W. KOOPMAN, & W. VAN DER WURFF. 2000. *The syntax of early English*. Cambridge: CUP.
- FISCHER, OLGA. 1992. Syntax. In N. Blake (ed.) *The Cambridge History of the English Language*, Vol. 2.
- FISCHER, OLGA, A. VAN KEMENADE, W. KOOPMAN, & W. VAN DER WURFF. 2000. *The syntax of early English*. Cambridge: CUP.
- VAN GELDEREN, E. 2000. *A History of English Reflexive Pronouns: Person, Self, and Interpretability*. Benjamins, Amsterdam.
- GRAFSTEIN, ANN. 1988. The Algonquian obviate and the Binding Theory. *NELS* 18, 175-192.
- GRAFSTEIN, ANN. 1989. Disjoint Reference in a Free Word Order Language. Donna Gerds and Karen Michelson (edd.) *Native American Languages in Theoretical Perspective*. Albany: SUNY Press.
- HAGÈGE, CLAUDE. 1974. Les pronoms logophoriques. *Bulletin de la Société de Linguistique de Paris* 69, 287-310.
- HELLAN, LARS. 1988. *Reflexives in Norwegian and the theory of grammar*. Dordrecht: Foris.
- HELLAN, LARS. 1990. A principle of global binding. *Grammar in progress: GLOW essays for Henk van Riemsdijk*. Dordrecht 187-198.: Foris.
- HUANG, YAN. 2000. *Anaphora: A cross-linguistic study*. Oxford: OUP.
- IATRIDOU, SABINE (1986). An anaphor not bound in its governing category. *Linguistic Inquiry* 17, 766-772.

- KIPARSKY, PAUL. 2002. Disjoint Reference and the Typology of Pronouns. In Ingrid Kaufmann and Barbara Stiebels (eds.), *More than Words*. Studia Grammatica 53, pp. 179-226. Berlin: Akademie Verlag, 2002.
<http://www.stanford.edu/~kiparsky/Papers/anaph.hierarchies-t.pdf>
- KIPARSKY, PAUL. 2005. Blocking and periphrasis in inflectional paradigms. *Yearbook of Morphology* 2004, 113-135. Dordrecht: Springer.
- KIPARSKY, PAUL. 2008. Universals constrain change, change results in typological generalizations. In Jeff Good, (ed.) *Linguistic universals and language change*. Oxford: OUP.
- LEES, R.B. & E.S. KLIMA. 1963. Rules for English pronominalization. *Language* 39: 17-28.
- PEELS, SASKIA. 2007. ἑωυτόν as a long-distance anaphor in Herodotus' histories. Master Thesis of Classics, Utrecht University.
- PETIT, DANIEL. 1999. *Sue- en grec ancien: la famille du pronom réfléchi. *Linguistique grecque et comparaison indo-européenne*. Paris: Peeters.
- POWELL, J. ENOCH. 1933. Studies on the Greek Reflexive — Herodotus. *The Classical Quarterly* 27: 208-221.
- POWELL, J. ENOCH. 1934. Studies on the Greek Reflexive — Thucydides. *The Classical Quarterly* 28: 159-174.
- REINHART, TANYA & ERIC REULAND. 1993. Reflexivity. *Linguistic Inquiry* 28, 178-87.
- REULAND, ERIC. 2001. Primitives of Binding. *Linguistic Inquiry* 32: 439-492.
- REULAND, ERIC & MARTIN EVERAERT. 2001. Deconstructing Binding. *The Handbook of Contemporary Linguistic Theory*. Eds. M. Baltin & C. Collins. Oxford: Blackwell, 634-669.
- REULAND, ERIC. 2006. Logophoricity. In Martin Everaert & Henk van Riemsdijk, eds. *The Blackwell companion to Syntax*, Volume III. Malden, MA: Blackwell Publishing, 1-20.
- REULAND, ERIC, & M. EVERAERT. 2010. Reaction to: The myth of language universals and cognitive science — Evans and Levinson's cabinet of curiosities: Should we pay the fee? *Lingua* 120: 2713–2716.
- RUDNEV, PAVEL. 2011. Why Turkish kendisi is a pronominal. *Ural-Altai Studies* 4: 76-92.
- SELLS, PETER. 1986. Coreference and bound anaphora: a restatement of the facts. *NELS* 16: 434-416.
- SELLS, PETER. 1987. Aspects of logophoricity. *Linguistic Inquiry* 18: 445-479.
- SIGURDSSON, HALLDÓR. 1990. Moods and (long distance) reflexives in Icelandic. In Joan Maling and Annie Zaenen (eds.) *Modern Icelandic Syntax*. Syntax and Semantics 24. San Diego: Academic Press.
- SIPMA, P. 1913. *Phonology and grammar of modern West Frisian*. Oxford: OUP.
- THRÁINSSON, HÖSKULDUR. 2007. *The Syntax of Icelandic*. Cambridge and New York: CUP.
- TIERSMA, P.M. 1985. *Frisian reference grammar*. Dordrecht: Foris.
- ZRIBI-HERTZ, A. 1989. Anaphor binding and point of view: English reflexive pronouns in sentence and discourse. *Language* 65: 695-727.