ABSTRACT

One of the earliest and most compelling observations to emerge in response to Chomsky’s binding theory was the suspicious cross-linguistic correlation between the morphological structure of anaphors and their interpretive potential. Specifically, morphologically simplex anaphors (e.g., Russian \textit{sebja}) are subject-oriented and can be bound by more distant antecedents than complex anaphors (e.g., English \textit{himself}), which generally require local antecedents, the grammatical function of which is not restricted to Subject. This dependence, however, was inconsistent with the GB architecture of the grammar, in which PF and LF were mediated by S-structure and, under Minimalism, is incoherent: meaning/LF cannot \textit{in principle} be read off of morphology/PF. Instead, it must be the anaphor’s LF “morphological” structure that somehow determines its binding properties. This paper therefore explores Slavic data for which PF and LF morphology diverge and argues that it is invariably the anaphor’s presumed LF morphology that is relevant for binding.

1. The problem and its original solution. The problem this paper addresses is empirical, but the argumentation will be largely conceptual. The empirical problem is cross-linguistic variation in the behavior of anaphora such as Russian \textit{sebja} or English \textit{himself}. Although there is considerable debate over the exact properties of different reflexive items in various languages, it is clear that fundamental differences exist. Consider the Russian examples in (1) and (2), based on Rappaport (1986):

(1) Milicioner$_1$ rassprašival arestovannogo$_2$ o sebe$_{1,2}$.
   ‘The policeman$_1$ asked the suspect$_2$ about \textit{himself$_{1,2}$}.’

(2) a. Professor$_1$ razrešaet assistentu$_2$ [PRO$_2$ proizvodit’ opyty nad soboj$_{1,2}$].
   ‘The professor$_1$ allows his assistant$_2$ [PRO$_2$ to conduct experiments on \textit{himself$_{1,2}$}].’

   b. Ivan$_1$ čital [Sašinu$_2$ stat’ju o sebe$_{1,2}$].
   ‘Ivan$_1$ read [Sasha$_2$’s article about \textit{himself$_{1,2}$}].’

Although (1) is unambiguous, the constructions in (2) are technically ambiguous.\footnote{That is, \textit{sebe} in (1) must refer to the Subject \textit{milicioner}, whereas \textit{soboj} in (2a) can refer either to the main clause Subject \textit{professor} or to the understood PRO Subject of the infinitive (itself controlled by \textit{assistentu}), and \textit{sebe} in (2b) can refer either to the Subject \textit{Ivan} or to the “Subject” of the noun phrase, namely \textit{Saša}. English judgments are precisely the reverse: in (1), \textit{himself} can be either \textit{the policeman} or the \textit{suspect} and, in (2), \textit{himself} can only refer to the most local antecedent, which is PRO in (2a) and \textit{Saša} in (2b). This is a typical example of the nature of the empirical problem, although the properties that differentiate Russian \textit{sebja} from English \textit{himself} hardly exhaust the possibilities found in languages of the world. The conceptual issue hinges on the fact that these properties are not accidental, but rather exhibit consistent patterns. Consideration of diverse anaphors among the world’s languages leads for example to the conclusion that no language could have a lexical item with the morphological properties of Russian \textit{sebja} but which behaved like English \textit{himself}; similarly, no language could}
have a lexical item with the morphological properties of English *himself* but which behaved like Russian *sebja*. Indeed, one of the earliest and most compelling observations to emerge in response to the binding theory of Chomsky (1980, 1981) was the suspicious correlation between the morphological structure of anaphors and their interpretive potential. Morphologically simplex anaphors look like heads (and can be inflected for case where the language calls for it). Russian *sebja* is a simplex anaphor. Complex anaphors, such as English *himself* on the other hand, have the internal structure of a phrase. The specific correlation, as initially noted by Yang (1983), is that simplex anaphors are subject-oriented and can be bound by more distant antecedents than complex anaphors can. Also, complex anaphors generally require local antecedents, and the grammatical function of the antecedent of complex anaphors is typically not restricted to Subject. Thus, Russian *sebja* and Chinese *ziji* ‘self’ are simplex, subject-oriented, and allow long-distance antecedents, whereas English *himself* and Chinese *ta-ziji* ‘s/he-self’ are complex, not subject-oriented, and do not allow long-distance antecedents. This is stated in (3):

\[(3)\]

a. Simplex (= head) Russian *sebja*, Chinese *ziji* ‘self’ ⇒
   subject-oriented and allow long-distance antecedents

   not subject-oriented and do not allow long-distance antecedents

In short, the claim was that, for any given anaphor, its set of possible antecedents depended on its internal morphological structure. This was a welcome discovery, as the correlation provided a realistic avenue for addressing the projection problem: How do children fix the interpretive properties of anaphors? The “principles and parameters” approach once popular in Government and Binding (GB) syntax is not viable here for several reasons, the most compelling being that different anaphors—even within a single language—can work differently (as one might expect, in a manner consistent with their morphological structure). Noting this, Wexler and Manzini (1987: 55) among others were led to what may be called the “Lexical Parameterization Hypothesis” in (4):

\[(4)\] **Lexical Parameterization Hypothesis**

Values of a parameter are associated not with particular languages, but with particular lexical items in a language.

This is, however, only part of the story. A major issue neglected by Wexler and Manzini’s statement has to do with learnability. While lexical properties must indeed be fixed in acquisition, leaving the matter as in (4) disregards the role of bootstrapping. That is, to the extent that the so-called “parametric settings” for particular lexical items are derivative of other, independently discernable properties—specifically, form or meaning—these “settings” can be bootstrapped from the item itself. But this of course means that there are no lexical “parameters” in the traditional sense, since the “settings” are in fact parasitic on aspects of form or meaning that must be learned regardless. There are other inadequacies in (4) related to matters of learnability. With respect to binding domain, as implied in Wexler and Manzini’s application of Berwick’s “Subset Principle,” (4) would require children first to adopt the grammar generating the smallest binding domain and then gradually to expand that domain as required by positive evidence. The gist of this principle is stated in (5):
(5) **Subset Principle**

Given a choice between competing grammars generating languages of which one is a proper subset of the other, the child selects the grammar that generates the smaller language.

Empirical evidence however suggests this not to be true, at least with respect to binding. Moreover, even if correct, to apply the Subset Principle in the acquisition of long-distance anaphors would require children to analyze complex sentences, contrary to the Degree-0 (“plus a little”) learnability hypothesis put forward in Lightfoot (1989). With respect to orientation, the Subset Principle would require children to posit the smallest set of possible antecedents (namely Subjects only) and to expand that as needed. Finally, and most relevant for present purposes, such an approach would not capture the correlation between allowing greater syntactic distance between an anaphor and its antecedent and limiting the set of possible antecedents to Subjects.

Instead, then, the correct approach to variation in the binding behavior of anaphors must somehow capitalize on the morphology of the actual anaphor. Indeed, in the GB period various ingenious technical solutions were entertained in order to implement the correlation between an anaphoric item’s interpretive properties of long-distance binding and subject-orientation, on the one hand, and its presumed morphological properties, on the other. While it is not my purpose to review these technical solutions here, credible implementations involved phrasal versus head (anaphor) movement (e.g., Pica 1987, Battistella 1989, or Cole et al. 1994) and phrasal versus head (antecedent) domain determination (e.g., Progovac 1992). Under all such approaches, however, the syntax included some mechanism that allowed an anaphor’s morphology to exert direct impact on its choice of an antecedent. In short, Logical Form (LF) properties were made to depend on Phonetic Form (PF) properties.

2. A conceptual challenge. This dependence, however, was inconsistent with the GB architecture of the grammar, in which PF and LF were mediated by S-structure. Within such a model of grammar, meaning (the so-called “LF–side”) cannot in principle be read off of morphological structure (the “PF–side”). This renders problematic the often-stated fact that the two appear to correlate for anaphora. Why this problem with the morphologically-driven approach to anaphor variation did not bother practitioners of GB at the time remains a mystery. In any event, the problem of letting the morphology of a particular lexical item delimit its possible antecedents is even more acute under Minimalism. The reason a PF–side morphological approach to a matter of interpretation is incoherent under Minimalism is because antecedency is determined in LF, not in the syntax per se. Hence, any such account would not have access to the anaphor’s overt morphological structure, visible only on the PF–side of the grammar. Instead, it must be the anaphor’s covert morphological structure, available on the LF–side, that somehow determines its binding properties. The postulation of LF “morphological” structure may seem like an oxymoron: How can LF have its own morphology? But what is meant here is simply the existence of structure, which a little reflection shows must be the case, since both LF–side and PF–side representations are read off of whatever structures are provided by the syntax.

Morphemes are pairings of morphophonological entities (“vocabulary items,” in Distributed Morphology terms) with sets of morphosyntactic features, including both closed-class formal syntactic features and open-class semantic features (“roots,” in Distributed Morphology terms). Morphemes concatenate with each other in highly structured ways. Thus, Russian *sèbja* consists
of [+anaphoric, +reflexive] and [+accusative], while English *himself* consists of [+pronominal, –masculine, –plural] and [+anaphoric, +reflexive]. This could be represented crudely as in (6), where SEBJA and HIMSELF abbreviate the relevant feature sets:

(6)  
\[
\begin{align*}
\text{a. SEBJA} & \\
& [+\text{anaph, refl, acc}] \\
\text{b. HIM + SELF} & \\
& [+\text{pron, m, –pl}] & [+\text{anaph, refl}]
\end{align*}
\]

The point is that the syntax provides a highly articulated feature structure and that this structure needs to map into both PF and LF representations. These pairings, however, are not always one-to-one. Consider some different kinds of examples: Russian (7a) *kuplju* versus English (7b) *will buy* or Macedonian (8a) *knigana* versus English (8b) *that book*:

(7)  
\[
\begin{align*}
\text{a. Russian kuplju} \\
\text{b. English will buy}
\end{align*}
\]

(8)  
\[
\begin{align*}
\text{a. Macedonian knigana} \\
\text{b. English that book}
\end{align*}
\]

In each case, the Slavic language has an inflected form of a single word whereas English has two independent words, each occupying its own head position in the syntax. Yet the feature content is more or less the same. Thus, on the PF–side, the morphology is different in Slavic and English—in Slavic the features are realized on a single head, whereas in English they require two heads (hence, phrasal structure) in order to be expressed. This is indicated in (9) and (10):

(9)  
\[
\begin{align*}
\text{a. [V + T kuplju]} \\
\text{b. [T will] [V buy]}
\end{align*}
\]

(10)  
\[
\begin{align*}
\text{a. [N + D knigana]} \\
\text{b. [D that] [N book]}
\end{align*}
\]

The syntax provides both V and T(ense) features in (9), and both N and D(eterminer) features in (10). These are manipulated on the PF–side, but on the LF–side the morphology is the same. That is, in their syntactic structures, both Russian and English have [TP [VP … ]] and both Macedonian and English have [DP [NP … ]]. In other languages, however, the syntax may be different. Thus, following a series of publications of which Bošković (2008) is representative, nominals in Russian (and many other languages) do not project a DP. Similarly, there is probably no reason to posit a TP for a language such as Chinese.
Let us return in this light to anaphors and the problem of how to exploit the observed correlation between structure and interpretation. If we take the interpretive properties of anaphors to derive from their morphological structure, then it is going to have to be the structure at LF rather than PF that matters. That is, the difference in interpretive properties between himself and sebja must derive from the fact that the latter has so-called φ-features (i.e., person, number, gender), whereas the former does not. These features, then, are going to require phrasal structure for English himself, but not for Russian sebja. What this means for our purposes is that one should look for anaphors where their PF and LF morphological structures arguably diverge and explore what happens. The prediction is clear: the anaphor’s presumed LF morphology should be relevant for binding, not its surface morphological structure. Slavic languages, it turns out, provide such data, and it is to examples of this sort that we now turn.

3. Some Slavic data. In Slavic, as elsewhere, PF morphology for the most part mirrors LF morphology. This is hardly surprising, as the transparency of one-to-one mappings makes them more easily parseable. It is for this reason that reciprocals, for example, are generally bipartite. Thus, not only does English each other consist of two distinct elements, but so also does Russian drug druga. The reason is because, in semantic terms (cf. Heim, Lasnik and May 1991), reciprocals are by their very nature bipartite: they necessarily contain a distributor, such as English each, and a reciprocator, such as English other. In accordance with their complex semantic structure, at LF reciprocals are universally phrasal, regardless of how they appear at PF. And since they are always phrasal—in the sense of (3b)—we expect them never to be subject-oriented and never to allow long-distance antecedents. We can then ask what would happen with a reciprocal which was to be a head morphologically (i.e., on the PF side). As stated, we expect its superficial structure to be irrelevant. Reflexives, on the other hand, vary across languages (and even within them: recall Chinese ziji ‘self’ versus wo-ziji ‘I-self’, ta-ziji ‘(s)he-self’, etc.) in terms of whether or not they also embody φ-features. If they do, then they are expected to behave as if phrasal, and if they do not, then they are expected to behave as heads. This contrast was apparent for English himself versus Russian sebja in (1)–(2) above. We can then ask what would happen with a reflexive which was morphologically phrasal but completely lacked φ-features, rendering it a head for LF purposes. Since it would be a head for interpretive purposes, we would expect it to be subject-oriented and to allow long-distance antecedents. In this section we will see that Slavic languages demonstrate both these predictions to be correct.

3.1. Back to Russian. In his application of the classic binding theory to Russian, Rappaport (1986) noted that Russian drug druga is unlike sebja in that it resembles English each other in terms of its binding properties. Compare his examples in (12) and (14) with those in (1) and (2), repeated as (11) and (13):

(11) Milicioner1 rassprašival arestovannogo2 o sebe1/*2.
    ‘The policeman1 asked the suspect2 about himself1/2.’

(12) Milicionery1 rassprašivali ix2 drug o druge1/2.
    ‘The policemen1 questioned them2 about each other1/2.’

(13) a. Professor1 razrešaet assistentu2 [PRO2 proizvodit’ opyty nad soboj1/2].
    ‘The professor1 allows his assistant2 [PRO2 to conduct experiments on himself1/2].’
b. Ivan čital [Sašinu stat’ju o sebe_{1/2}].
   ‘Ivan read [Sasha’s article about himself_{1/2}].

(14) a. My_{1} poprosili ix_{2} [PRO_{2} nalit’ drug druga_{1/2} čajku].
    ‘We asked them_{2} [PRO_{2} to pour each other_{1/2} some tea].’

b. Pisatelji čitali [vospominanjia xudožnikov drug o druge_{1/2}].
   ‘The writers_{1} read [the artists’_{2} reminiscences about each other_{1/2}].’

Rappaport had no explanation for the facts about reciprocal drug druga versus reflexive sebja, simply stating them, but we now know that these facts follow from intrinsic properties of the particular lexical items. The reciprocal—reflecting both its bipartite drug druga morphology and its bipartite semantics—necessarily has two pieces, as schematized in (15).\(^{10}\)

\[
\text{EACH} + \text{OTHER} \\
\vphantom{\text{EACH}} \begin{array}{c}
\text{[+distributor]} \\
\text{[+anaph, +recipr]}
\end{array}
\]

In this regard, all reciprocals, including Russian ones, are expected to behave in a similar fashion to English himself. They both have phrasal structure, and it is this structure that causes them to be strictly locally-bound and also that allows them to be bound by non-Subjects. Although this phrasal structure happens to correlate with PF morphology in both Russian and English, which is the canonical direct correspondence between form and meaning, my claim is that the binding properties of reciprocals actually depend on the fact that they have complex morphological structure in LF. This is universal, given what reciprocals mean.\(^{11}\)

3.2. Polish. West Slavic provides a particularly telling demonstration of the fact that what matters is semantic rather than morphological structure.\(^{12}\) In Polish, the reflexive behaves just as in Russian in terms of its binding properties. Consider, for example, the sentences in (16), from Reinders-Machowska (1991), which—just like Russian (11) and (13a)—differ from English with respect to the possibilities of a non-subject or long-distance antecedent:

(16) a. Jan_{1} opowiada Piotrowi o sobie_{1/2}.
    ‘Jan talks to Peter_{2} about himself_{1/2}.’

b. Maria_{1} kazała Piotrowi [PRO_{2} zbudować dom dla siebie_{1/2}].
    ‘Maria_{1} told Peter_{2} [PRO_{2} to build a house for himself_{2}/*herself_{1}].

However, in Polish the reflexive morpheme can also function as a reciprocal, and when it does, the judgments change accordingly.\(^{13}\) Reinders-Machowska (1991: 147) cites the Polish examples in (17) as a relevant minimal pair:

(17) a. Chłopcy_{1} czytali [dziecięcąt wspomnienia o sobie_{1/2}].
    ‘The boys_{1} read [the girls’_{2} memories about themselves_{1/2}].’

b. Chłopcy_{1} czytali [dziecięcąt wspomnienia o sobie_{1/2}]
    ‘The boys_{1} read [the girls’_{2} memories about each other_{1/2}].’
Thus, when Polish 

_ściebie_ has a reflexive meaning, as in (17a), it patterns with Russian _sebja_. On the other hand, when it has a reciprocal meaning, as in (17b), it patterns with English _each other_, Russian _drug druga_, and English _themselves_. This is because its LF structure in (17a) is something like (18a), and its LF structure in (17b) is something like (18b).^14

\[(18) \quad \text{a. SOBIE } \quad \text{b. } O^\text{P} + \text{SOBIE} \]

\ [+anaph, (+refl, +loc)] \quad [+distributor] [+anaph, (+recipr, +loc)]

The symbol “\(O^\text{P}\)” in (18b) represents an LF Operator which functions as a logical distributor. This Operator, although present in the syntax and semantics, happens to have no morphological exponent. That is, it is silent in PF. But the absence of an overt distributor has no impact on _sobie_’s interpretative possibilities, which are determined in LF.

There are various ways that one might implement the fact that, at PF, the two versions in (18) are not differentiated. For the sake of concreteness, I assume that the _sob-/ścieb_- root has just the feature [+anaph]. Taking nondistinctness to be a prerequisite for vocabulary insertion (cf. e.g. Sidiqqi 2009), this allows the locative form _sobie_ to be inserted into any syntactic slot with (at least) the features [+anaph, +loc]; whether it is going to be interpreted as a reflexive or reciprocal is immaterial. That is, the anaphoric vocabulary item in Polish is simply underspecified: its interpretation as a reflexive or reciprocal depends on syntactic features which are interpretable hence retained in LF, but, from the perspective of PF, the intended reading can only be worked out in context.\(^15\) Returning to (17a)/(18a), the syntax provides something like [+anaph, +refl, +loc], which can be replaced by (“spelled–out as”) _sobie_. For (17b)/(18b) we have two nodes in the syntax, roughly [ +distributor] and [+anaph, +recipr, +loc]. Here one might imagine that the Polish reciprocal becomes morphologically simplex through the PF–side operation of fusion, which combines these two feature sets into one, i.e., [ +distributor, +anaph, +recipr, +loc]. Once again, the form _sobie_ will be inserted under nondistinctness.\(^16\) But—whatever the technical implementation—for LF purposes only the local antecedent _dziewcząt_ ‘the girls’ is accessible when _sobie_ is interpreted as a reciprocal.

Similarly, if this account is on the right track, we expect Objects and not just Subjects to be accessible antecedents, but only when the anaphor has a reciprocal interpretation. This is indeed correct, as demonstrated in (19):^17

\[(19) \quad \text{a. Chłopcy}_1 \ zapytali \ dziewczęta_2 \ o \ siebie_{1/2}. \]

‘The boys\(_1\) asked the girls\(_2\) about _themselves\(_{1/2}\)._’

\textbf{b. Chłopcy}_1 \ zapytali \ dziewczęta_2 \ o \ siebie_{1/2}. \]

‘The boys\(_1\) asked the girls\(_2\) about _each other\(_{1/2}\)._’

In (19a), _sobie_ has a reflexive interpretation and is subject-oriented, but in (19b), where _sobie_ has a reciprocal interpretation, it is free to refer to the Object as well. Thus, reflexive _sobie_ patterns like Russian _sebja_ and not English _themselves_, as expected since both are heads, but reciprocal _sobie_ patterns like Russian _drug druga_ and English _each other_, just as if _sobie_ were a phrase here. In short, morphological PF–LF mismatches exist and, as expected, although pronunciation necessarily reflects PF, interpretation necessarily reflects LF.
3.3. **Czech.** In Czech as well, the reflexive behaves like its Russian counterpart. However, as in Polish, in Czech the same vocabulary item can also function as a reciprocal, and—again just as in Polish—the judgments vary accordingly. Avgustinova et al. (1999) and Toman (1991) provide considerable Czech data which make these points (although only Avgustinova et al. recognize the correlation between interpretative function and range of possible antecedents). First, when *sebe* functions as a reflexive, it can be long-distance bound, both out of an infinitival clause as in Avgustinova et al.’s (20a) and out of a possessed NP, as in Toman’s (20b): 18

(20) a. Vedoucí1 diplomové práce doporučil Petrovi2 [PRO2 citovat sebe₁/₂]
   ‘The supervisor1 of his thesis recommended to Peter2 [PRO2 to cite himself₁/₂].’

   b. Jana₁ zahodila [Karlovy₂ básně o sobě₁/₂].
   ‘Jana₁ threw away [Karl’s poems about himself₁/*/herself₁/her₁].’

Similarly, the examples in (21) show that, as expected, a Subject antecedent is required: 19

(21) a. V zrcadle Jan₁ ukázal Petra₂ sobě₁/*/₂.
   ‘Jan₁ showed Peter₂ himself₁/₂ in the mirror.’

   b. *Jan₁ mluvil s Marii₁ o sobě₁/*/₂.
   ‘Jan₁ talked with Maria₂ about himself₁/*/herself₂.’

   c. Jana₁ navštívila Krla₂ kvůli sobě₁/*/₂.
   ‘Jana visited Karl for her own benefit.’

Now consider how Czech *sebe* behaves when it has a reciprocal interpretation. The examples in (22), from Avgustinova et al. (1999), show that in this case an Object antecedent is perfectly acceptable:

(22) a. Zamotal do sebe několik pohádek.
   ‘He entangled several fairy tales into each other.’

   b. Položili meče (ostřím) proti sobě.
   ‘They laid the swords (wth the blades) against each other.’

Finally, one can once again construct minimal pairs in which the the set of possible antecedents correlates with the reflexive versus reciprocal interpretation. The former is given in (23), the latter in (24): 20

(23) a. Pan Novák₁ poštval sousedy₂ proti sobě₁/*/₂.
   ‘Mr. Novak incited the neighbors against himself/themselves.’

   b. [Markrabě a vévoda]₁ poručili tělesným strážcům₂ [PRO₂ chránit sebe₁/₂].
   ‘[The markgrave and the earl]₁ ordered the bodyguards₂ [PRO₂ to protect themselves₁/₂].’

(24) a. Pan Novák poštval sousedy proti sobě.
   ‘Mr. Novak incited the neighbors against each other.’
b. [Markrabě a vévoda]₁ poručili tělesným strážcům₂ [PRO₂ chránit sebe₁₂].
   ‘[The markgrave and the earl]₁ ordered the bodyguards₂ [PRO₂ to protect each other₁₂].’

As a reflexive, sebe in (23b) is ambiguous, but as a reciprocal, sebe in (24b) can only refer back to the local PRO subject (itself controlled by the main clause Object, tělesným strážcům).

3.4. Bulgarian. On the flip side, one might expect mismatches that go in the opposite direction, that is, morphologically complex anaphors which seem not to warrant any complexity at LF. These are more difficult to pin down because, as discussed by König and Siemund (2000) inter alia, many languages exhibit an emphatic reflexive that is morphologically phrasal since it is composed of a simplex anaphor plus an adnominal intensifier, such as German sich selbst. These have logophoric and other special focus properties that introduce complications not only for the traditional binding theory but also for the morphological predictions discussed in the present paper. Since, however, these predictions are based on PF rather than LF morphology, there is some “wiggle room”; in particular, intensifier and/or focus features may imply an Operator in LF, so that the anaphor is indeed phrasal.

Putting this problem aside, one likely place to look for a true mismatch is Bulgarian. This language exhibits a clearly phrasal anaphor, namely sebe si, which consists of the simplex anaphor sebe plus the adnominal “dative” clitic si. Like reflexives in other Slavic languages, the form sebe si lacks ϕ-features: it is unmarked for person, number, or gender, hence is featurally nondistinct from any antecedent. Unlike other Slavic languages, however, Bulgarian does not use sebe without the otiose clitic si. Since this si is completely redundant semantically in Bulgarian, it should not have an LF correlate, hence we should expect Bulgarian sebe si to pattern with Russian sebja. According to the data below, from Schürcks (2003), this prediction is borne out:

(25) a. Ivan₁ razkazal na doktora₂ [istorii za sebe si₁₂].
   ‘Ivan₁ tells the doctor₂ [stories about himself₁₂].’

b. Ivan₁ pročeta [Petrovata₂ statija za sebe si₁₂].
   ‘Ivan₁ read [Peter’s₂ article about himself₁₂].’

c. Ivan₁ popita bašta₂ si za [Petrovata₃ statija za sebe si₁₂₃].
   ‘Ivan₁ asked his father₂ about [Peter₃’s article about himself₁₂₃].’

In Bulgarian (25a) sebe si exhibits subject-orientation and in (25b) it exhibits long-distance binding, over the Subject Petrovata; (25c) combines both of these properties. The range of possible interpretations thus contrasts with the English sentences in (25), indicating that Bulgarian sebe si—PF appearances to the contrary—functions as a head rather than a phrase. That is, by all available diagnostics, Bulgarian sebe si behaves as if simplex for purposes of the binding theory, demonstrating the irrelevance of its complex morphological structure on the PF side. It has an LF structure similar to Russian (6a), as indicated in (26a), but undergoes morphological fission to produce a PF structure more like (26b):

(26) a. SEBE + SI
    [+[anaph, +refl, +obj]]

b. sebe + si
    [N, +anaph, +refl, +obj] [K, +anaph, +refl, +dat]
Before concluding, it is worth noting that Bulgarian (but, for some reason, not Macedonian), has a colloquial alternative to *sebe si* which is morphologically reminiscent of English *himself*. As Schürcks (2003, 2006) shows, however, neither c-command nor locality requirements seem to pertain to Bulgarian *nego si*. Thus, not only can local Objects antecede, as in (27), but so can distant and even non-commanding expressions, as in (28):

(27) Ivan₁ popita Penčo₂ za *nego si₁/2.*
    ‘Ivan₁ asked Pencho₂ about himself₁/2.’

(28) a. Ivan₁ kazva, [če doktorŭt₂ mrazi *nego si₁/2.*]
    ‘Ivan₁ says [that the doctor₂ hates himself₁/2.]’

    b. [Sinŭt₁ na [Ivanovija₂ brat₃]] kritikuva *nego si₁/2/3.*
    ‘[The son₁ of [Ivan₂’s brother₃]] criticizes himself₁/*2/*3.’

While it is not surprising that, in contrast to *sebe si* in (25), *nego si* in (27) can be anteceded by the Object Penčo, the data in (28) show that *nego si* is not comparable to English *himself*, since it behaves as if literally “exempt” from the binding theory. Replacing *nego si* in (28) with *sebe si*, as in (29), shows that *sebe si* is, on the other hand, perfectly “well behaved”:

(29) a. Ivan₁ kazva, [če doktorŭt₂ mrazi *sebe si₁/*2.*]

    b. [Sinŭt₁ na [Ivanovija₂ brat₃]] kritikuva *sebe si₁/*2/*3.*

What is going on with *nego si* is thus considerably more complex than what would be expected just by adding φ-features to the anaphor. Although space considerations prevent further discussion here, Schürcks (2003, 2006) offers an answer in terms of the notion of “point of view” put forward in Kuno (1987).²⁵

4. Conclusion. This paper has addressed the problem of how the morphological structure of anaphors can feed the two interface components, LF and PF, in a way that leads to the right interpretative results. Assuming that it is only PF–side morphological processes which can manipulate structures, LF morphology should not encode anything more than what has been provided by the syntax. I have argued that PF morphology, on the other hand, can encode less than required by LF, as in the case of Polish and Czech “head” reciprocals, or more than LF, as in the case of Bulgarian “phrasal” reflexives. However, since binding is established in LF, semantic interpretation is necessarily oblivious to the facts of overt morphology.

This conclusion, inevitable under any approach that relegates binding to an interpretative semantic level such as GB/Minimalism’s Logical Form or Jackendoff’s more generic Conceptual Structure,²⁶ has the advantage of providing a way around prima facie counterexamples to the PF morphological generalizations in (3).²⁷ What you see may be less than what you get (West Slavic reciprocals) or it may be more (Bulgarian reflexives). Of course, one essential question remains unresolved: How does an anaphor’s LF structure come to impact on the set of possible antecedents it can consider and why, in particular, does phrasal versus head structure in LF matter? In this short paper I have put this far from trivial matter of execution aside, leaving it for future research.
References
Schürcks, L. (2003), Binding and Bulgarian, Groningen Dissertations in Linguistics, #44.
Siddiqi, D. (2009), Syntax within the word: Economy, allomorphy, and argument selection in Distributed Morphology, John Benjamins, Philadelphia.
Endnotes

1 Much ink has been spilled debating the interpretation of Russian *sebja* and *svoj*; chapter 9 “Vozvратные местоимения” of Padučeva 1985 in particular offers a lengthy treatment of the interpretative possibilities. The purpose of the present short paper is not to offer a comprehensive theory of anaphora, but rather simply to make a point about their analysis within a particular model of grammar. It is beyond the scope of this paper either to deal with models other than GB/Minimalism or to examine data sets more complete than those required to make the basic point. Consideration of “real” corpora, as suggested by an anonymous reviewer, would only serve to muddy the waters, since such data are not only more complex than needed for the purposes of making the point at hand, but would also introduce irrelevant factors due to their unreliability, inconsistency, and heavy pragmatic conditioning. I also put aside reflexive possessive pronouns of the *svoj* type (although these behave the same in Slavic as *sebja* reflexives, and are not treated simply for reasons of space), as well as Slavic postfixes/elitics of the -*sja/się* type (which are not treated because they are not subject to the binding theory but rather directly manipulate predicate-argument structure, hence behave very differently from their true pronominal counterparts).

2 See e.g. Cole et al. 1994 for discussion.


4 One might take this as an inadequacy of the model itself. Indeed, the general observation that PF and LF seem to operate in tandem has led to several promising alternatives to GB/Minimalism, the most compelling of which, in my view, is Jackendoff’s (2002) “Parallel Architecture” model.

5 This is true of standard “Y-model” Lexicalist Minimalism. In systems augmented by Distributed Morphology, “the two arms of the Y-model join again at the conceptual interface” (Siddiqi 2009:14).

6 No special significance should be imputed to the particular features, which are meant to be purely illustrative.

7 Since it is not obvious whether Russian *sebja* should be analyzed as bimorphemic or not, i.e., whether [+anaph] and [+acc] are two feature sets or just one, I represent them together. I also put aside the issue of case in English.

8 One might wonder how case features fit into PF and/or LF structures and, in particular, whether they induce phrasal status. The Slavic facts clearly show that case is completely irrelevant; e.g., Russian locative *sebe* in (1) or instrumental *soboj* in (2a) count as simplex (heads), not complex (phrases). One possibility, in keeping with minimalist argumentation, is that case features are stripped away in the mapping to LF, since they had no semantic interpretation (contra, e.g. Jakobson 1936/1971). On the other hand, case features must be retained in the mapping to PF, since they do have a morphological interpretation. If so, we have another argument that it is LF rather than PF morphology that matters for binding.

9 As an anonymous reviewer reminds me, there has of course been much discussion of binding in Russian since this early publication. Rappaport’s work was however seminal in presenting the core facts and in making the core observations. Moreover, given the conceptual goals of the present paper, consideration of additional subtleties would be otiose and distracting to the purpose at hand.
Recall that the capitalized EACH and OTHER refer to the meanings of the items, not to the words themselves.

The data reported for child English by Read and Hare (1979) constitute the only exception to this of which I am aware. Young children seem to be able interpret each other with more distant antecedents; this should presumably derive from their not yet having worked out its bipartite semantics.

An anonymous reviewer states that Russian sebja is like its West Slavic counterparts in having reciprocal function. This is simply not true, as an attempt to translate any of the West Slavic examples with reciprocal siebie/sebe into Russian would demonstrate.

This is not to imply that disambiguation is impossible. The examples in this article are chosen for their simplicity, but, as an anonymous reviewer observes, the emphatic sam “may serve a disambiguating purpose.” The reviewer provides the following contrast for Polish:

(i) Ci koledzy podziwiają siebie samych.
    ‘These colleagues admire themselves.’

(ii) Ci koledzy podziwiają (tylko) siebie.
    ‘These colleagues admire (only) each other.’

In (18) I place “+refl” and “+recipr” in parentheses because the lexical item SOBIE does not actually make this distinction.

In the course of considering comparable Czech data, Toman (1991: 170) states that “it is more adequate to say that a regular reflexive pronoun in Czech may have a reciprocal reading rather than singling out a reciprocal subclass.” This view, however, disregards the morphological correlation in (3) that is the point of the present paper, and has nothing to say about why the same item shows different restrictions on the range of antecedents depending on whether it has a reflexive or reciprocal function. Toman goes on to suggest that the “reciprocal reading is simply a function of the plurality of the antecedent,” because the reciprocal reading is unavailable in the absence of a plural potential antecedent. But this is simply because all anaphors need antecedents: the boy cannot bind each other just as it cannot bind herself. If there is potential plural antecedent, as e.g. in Polish (17), then either reading is available. In short, the syntax and LF distinguish reciprocals from reflexives, the vocabulary item SIEBIE does not, hence is compatible with either. Toman’s confusion in fact highlights my basic argument that, because under GB/Minimalism matters of PF do not determine interpretation, the actual form of the reflexive/reciprocal is technically irrelevant to LF.

Alternatively, the feature [+distributor] is deleted, or it is retained but there is no vocabulary item to insert into that slot. However this is formalized, it is part of the process of Spell–Out and not relevant to LF.

An anonymous reviewer points out that the word order dziewcząt wspomnienia would be preferable as stylistically unmarked. This does not however affect the judgments in (17), which is drawn directly from Reinders-Machowska (1991).

Toman (1991: 155) however cites (i) to argue that reflexivization in Czech, like himself in English but unlike sebja in Russian, “is constrained to clauses”:

(i) *Karel₁ nas nutil, oholit sebe₁.
    ‘*Karel₁ forced us to shave himself₁.’
These examples raise various peripheral questions. For one thing, it is unclear why the Object antecedent is marked as highly degraded rather than “*”; the best way to refer to Pietra here would be to use *jemu samému*. This example also comes up against the issue of whether the direct object c-commands the indirect object (as needed to obtain a reading in which Petra is the antecedent, or the other way around. (21b) also raises a c-command issue, since s Marii branches, although it is worth noting that the same branching in English *with Mary* does not seem to prohibit binding by Mary. For this reason I also offer (21c), from Toman (1991), which avoids the c-command problem.

(23a) is from Toman (1991) and (23b) from Avgustinova et al. (1999). They add *ne však již své poddané* ‘but not their subjects’ to coerce the long-distance reading.

See König and Siemund 2000 for details, as well as Kibrik and Bogdanova (1995) for discussion of Russian *sam*. I thank an anonymous reviewer for drawing my attention to this latter work.

(21b) also raises a c-command issue, since s Marii branches, although it is worth noting that the same branching in English *with Mary* does not seem to prohibit binding by Mary. For this reason I also offer (21c), from Toman (1991), which avoids the c-command problem.

20 (23a) is from Toman (1991) and (23b) from Avgustinova et al. (1999). They add *ne však již své poddané* ‘but not their subjects’ to coerce the long-distance reading.

21 See König and Siemund 2000 for details, as well as Kibrik and Bogdanova (1995) for discussion of Russian *sam*. I thank an anonymous reviewer for drawing my attention to this latter work.

22 In Macedonian, the *si* is optional in objective positions, but obligatory in dative ones. The following are offered by Tomić (2012):

(i) Go zede so *sebe*<sub>(si)</sub>.
   ‘(S)he took it with *herself/himself*.’

(ii) Si go dade *sebe*<sub>*</sub><sup>(si)</sup>.
   ‘(S)he gave it to *herself/himself*.’

Although I do not examine possessives here, it is worth noting that the Bulgarian possessive *svoj* only optionally occurs with clitic *si*, in this respect resembling both *sebe* and *svoj* reflexives in Macedonian. The ramifications of this and related phenomena are explored from a larger Balkan perspective in Franks (2012).

23 Note that long-distance binding out of infinitives, although predicted, cannot be demonstrated for Bulgarian since this language lacks infinitives.

24 In (26b), N indicates that *sebe* is a full nominal and K indicates that *si* is a case clitic.

25 Franks (2012) argues that *nego*, as well as its counterparts in Greek, Turkish, and Albanian, freely refers as a pronoun, and that it binds the reflexive element (*si* in Bulgarian) within the extended nominal projection. This pronoun is however “protected” by additional functional structure, so that no local disjoint reference effects arise either, hence even local c-commanding antecedents are possible in e.g. (27) and (28).

26 Although it should be noted that in Jackendoff’s (2002) architecture of grammar, unlike under GB/Minimalism, Conceptual Structure can in principle directly correspond to morphology.

27 More of these are offered in Huang 1996, who therefore rejects the morphology–semantics correlation. My response is of course that the correlation needs to be expressed at a more abstract level, namely through the mediation of syntactic structure.