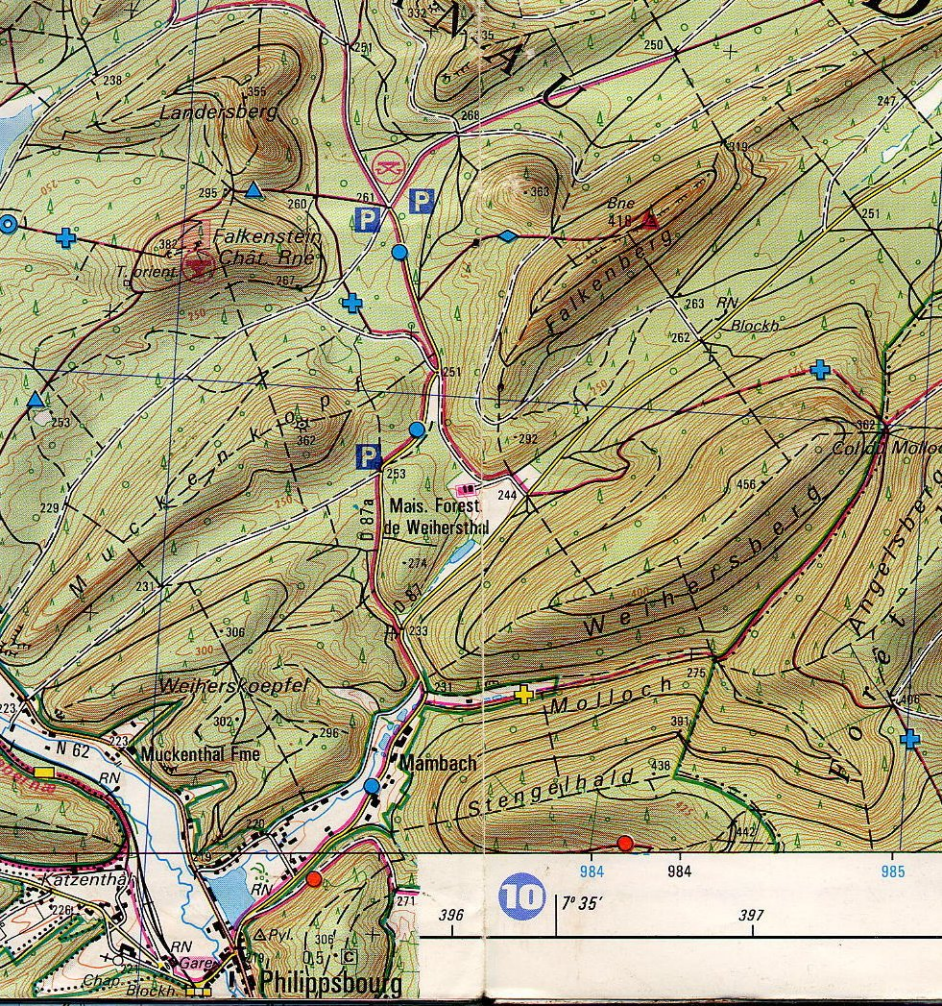
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An Argument for Multiple Spell-Out

Steven Franks
Indiana University
Željko Bošković
University of Connecticut

In this squib we present a new argument based on Bulgarian (Bg) clitic data for the kind of ''multiple Spell-Out'' theory recently argued for in works such as Epstein et al. 1998, Uriagereka 1999, and Chomsky 2000; for an early proposal along these lines, see Bresnan 1971. In particular, we will show that if information is sent from the syntax to the phonology at more than one point, and if CP but not IP is a ''phase,'' then certain otherwise mysterious Bg clitic-ordering facts follow straightforwardly.

The squib is organized as follows: in section 1 we describe the basic Bg data, in section 2 we discuss several approaches to these data, in section 3 we introduce new data that reveal the derivational nature of clitic-verb linearization, and in section 4 we demonstrate the empirical advantages of adopting multiple Spell-Out to accommodate the clitic-ordering paradigm.

1 Verb-Adjacent Clitics in Bulgarian and Macedonian

The South Slavic languages, including Bg and Macedonian (Mac), have complex systems of pronominal and verbal auxiliary clitics.[1] In Bg and Mac these elements typically precede the verb, as in (1).[2]

(1) a. Včera Petko *mi* *go* dade.
yesterday Petko me(DAT) it(ACC) gave
'Yesterday Petko gave it to me.'
b. Včera *mi go* dade Petko.
c. *Petko dade *mi go* včera.
d. . . . če/deka Petko *mi* *go* dade
that(Bg/Mac) Petko me(DAT) it(ACC) gave
včera.
yesterday
'. . . that Petko gave it to me yesterday.'

Furthermore, they cannot be separated from the verb, as shown by (2).

(2) *Petko *mi go* včera dade.

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[1] There is a burgeoning literature on Slavic clitics. For recent discussion and an extensive bibliography, see Franks and King 2000.

[2] Throughout this squib, clitics are italicized in examples.

These simple data are sufficient to illustrate the basic properties of Bg and Mac pronominal clitics: they are verb-adjacent (and not, e.g., second position) and they precede the verb.

While these generalizations are correct for Mac finite clauses,[3] there is one consistent exception that arises in Bg. If the verbal complex is initial, then the clitics must follow rather than precede the verb.

(3) a. (Bg: */Mac: OK) *Mi go* dade Petko včera.
b. (Bg: OK/Mac: *) Dade *mi go* Petko včera.

This is the well-known Tobler-Mussafia (TM) effect. It results from a phonological difference between the relevant Bg and Mac clitics: in Bg these elements are strictly enclitic, whereas in Mac they are not. When no nonverbal lexical material that could support the clitics occurs in front of the clitics, the verb must precede the clitics in order to provide phonological support for them. This ''repair'' strategy of pronouncing the verb to the left of the clitics occurs in Bg, but not Mac.

We emphasize that the need to invoke the inverted word order in Bg (3b) is sensitive to the absence of material that could support the preverbal enclitics. Franks (1998, 1999b, 2000) points out that even *i* 'and' is sufficient to serve this purpose, as shown in (4a).

(4) a. I *mi* *go* dade Petko včera.
and me(DAT) it(ACC) gave Petko yesterday
'And Petko gave it to me yesterday.'
b. *I dade *mi go* Petko včera.

This curious fact will play a pivotal role in the discussion in sections 3 and 4.

2 Approaches to the Tobler-Mussafia Effect

While it is fairly obvious that phonological factors are responsible for the initial ''V + clitic'' order in Bg, there is less general consensus about how to implement them. In this section we mention three conceptually distinct ways of accommodating the TM effect.

One standard account in the literature involves the PF reordering mechanism of prosodic inversion (PI), popularized by Halpern (1995).[4] Under this view the output of the syntax leaves the clitics left-adjoined to the verb, and in the phonology the clitic cluster makes a minimal move rightward, to the right edge of the first prosodic word to its right (in this instance, the verb), in order to be properly supported prosodically.

[3] We disregard here nonfinite clauses, which introduce certain complications that do not affect our central theoretical point; see Franks 1998, Franks and King 2000, or Bošković 2000a for details.

[4] See also Embick and Izvorski 1995, Rudin et al. 1999, Franks and King 2000, Bošković 2000a,b, and the papers in Halpern and Zwicky 1996 for further discussion of PI and references.

(5) *mi go* [dade]$_{\omega}$ Petko včera → [dade]$_{\omega}$ *mi go* Petko včera

PI takes place in Bg, but not in Mac, since only in the former does the syntax fail to leave the clitics *mi go* 'me it' in a position where they can be prosodically supported.

An alternative approach to clitic positioning takes advantage of Optimality Theory principles. Works such as Anderson 1993, 1996, Grimshaw 1997, Gerlach 1998, and Legendre 1999 have demonstrated that these phenomena can at least be described in terms of the interaction of a small set of conflicting alignment constraints. In this case the relevant constraints would presumably involve one (or a set) with the effect of realizing the clitics immediately to the left of V, a lower-ranked constraint that favors the right edge of V, and then another, very highly ranked constraint, that bars clitics from initial position within their intonational phrase. In order to meet the last constraint, the lower-ranked one that places pronominal and auxiliary clitics to the left of V must be violated. Since the TM effect obtains only in Bg, the constraint barring clitics from initial position would have to be ranked much lower in Mac. Many other variants are of course possible.

Finally, a third approach is available under the copy-and-delete theory of movement outlined in Chomsky 1993. In this system, movement consists of two operations: copying, which takes place in the syntax, and deletion of all but the highest copy in PF.[5] In various works, Franks (1998, 1999a,b, 2000) proposes that a lower copy of a clitic can be pronounced only if pronouncing the highest copy would lead to a violation of the clitic's prosodic requirements. The proposal is a result of a more general approach to the pronunciation of nontrivial chains (in this regard, see also Bobaljik 1995, Hiramatsu 1997, Pesetsky 1997, 1998, Bošković 1999, and Bošković and Franks 1999), which holds that a chain is pronounced in the head position, with lower copies deleted in PF, unless pronunciation in the head position would give rise to a PF violation. If the violation can be avoided by pronouncing a lower copy of the chain, then the lower copy is pronounced instead of the head of the chain.[6] Bošković and Franks (1999) and Bošković (2000a) adopt this approach to the pronunciation of nontrivial chains and extend it to the Bg and Mac data in (1)–(4) in the following manner. Suppose that copies of the clitics are present both above and below the verb.[7] As stated, we assume that the highest

[5] For an interesting recent discussion of traces/copies, see Epstein and Seely 1999, where it is shown that the trace/copy theory is a type of derivational theory since it is based on derivation-encoding mechanisms.

[6] For discussion of the motivation for this general tendency to pronounce the head of the chain, see Bošković 2000a, Franks 1999b, 2000, and Pesetsky 1997, 1998.

[7] The precise identity of these positions and the reason for the creation of the copies in question is not important for current purposes; see Bošković 2000a for relevant discussion.

copy of the clitics is pronounced except when the pronunciation of the highest copy would result in a PF violation. These assumptions allow us straightforwardly to capture the generalization that the verb can precede the clitics in Bg only when no other lexical material is located in front of them, since only in this situation will speakers be allowed to pronounce a lower copy of the clitics, located to the right of the verb. If, on the other hand, there is lexical material preceding the clitics in their raised position, then the highest copy has to be pronounced. Schematically, this can be represented as in (6); here we disregard irrelevant copies of X, the clitics, and the verb.

(6) a. X clitics V ~~clitics~~
b. ~~clitics~~ V clitics (Bg only)

The schema in (6a) corresponds to the grammatical examples in (1), where there is no need to pronounce a lower copy, hence such pronunciation is disallowed. Schema (6b), on the other hand, corresponds to Bg (3b), in which PF considerations force deletion of the higher copy. Notice that, as before, this pertains only to Bg, since in Mac nothing goes wrong in PF if speakers pronounce the highest copies of the clitics, located to the left of the verb. As a result, the ''clitics + V'' order emerges in Mac regardless of phonological environment and the ''V + clitics'' order is underivable, as desired.

In this section we have presented three different approaches to the word order phenomena described in section 1. In what follows we adopt the last approach, which exploits copy and delete. While we do this not only for the sake of exposition, but also because we believe it holds the most promise as an explanatory mechanism,[8] our argument for multiple Spell-Out does not actually depend on how the TM effect is formally implemented.[9]

3 The *li* Puzzle

Unlike pronominal and auxiliary clitics, the yes-no interrogative clitic *li* is always enclitic in both Bg and Mac. Since, as standardly assumed, *li* is generated in C^0, it need not form a cluster with the other clitics. When a phrase precedes and hosts *li,* as in the following Bg example, cited by Ewen (1979) and King (1994), that phrase is contrastively focused:

(7) $[_{DP}$[Nova-ta]$_\omega$ [zelena]$_\omega$ [riza]$_\omega$] *li ti* podari Krasi?
new-the green shirt Q you(DAT) gave Krasi
'Was it the new green shirt that Krasi gave to you?'

[8] For details see Bošković 2000a, or Franks 1998, 1999a,b, 2000.

[9] It is, however, not obvious how to recast our account in Optimality Theory terms, since the central claim is highly derivational: as discussed below, in order to obtain the correct result, the decision to pronounce the clitics to the right rather than to the left of the verb must be made at a certain point in the derivation (when CP, but not IP, is built).

Franks (1998) argues that the DP *novata zelena riza* 'the new green shirt' in (7) has moved to [Spec, CP]; hence, *li* follows it. If so, nothing special needs to be said about the focus *li* construction, which is straightforward in both Bg and Mac, and we ignore it in the remainder of this squib.

In a neutral yes-no question *li* exhibits the following distribution:[10]

(8) a. (Bg: */Mac: OK) *Ti* *go* dade *li* Petko
you(DAT) it(ACC) gave Q Petko
včera?
yesterday
'Did Petko give it to you yesterday?'

b. (Bg: OK/Mac: *) Dade *li ti go* Petko včera?

The Mac word order in (8a) is not surprising, since *ti* and *go* in this language are proclitic. Bošković (2000a) shows that the verbal complex *ti go dade* adjoins in the syntax to the left of *li* in both languages. This straightforwardly results in the Mac order in (8a). The Bg word order in (8b), however, presents more of a technical problem, although it should be obvious that, whatever approach to the TM effect is adopted, *dade* must come first since in this language *ti* and *go,* in addition to *li,* are enclitic. In our copy-and-delete system, based on the analysis in Bošković 2000a, Bg (8b) is derived as follows:

(9) $[_{CP}[_{C'}[$~~ti go~~ dade] + li] [ti go ~~dade~~] Petko včera]

The lower copy of *ti go* must be pronounced since clitics cannot be initial in Bg. In deriving Mac (8a), on the other hand, it is the lower copy of the clitics that deletes in PF, in accordance with the general PF desideratum of pronouncing the highest copy possible.

Recall now that the TM effect in Bg is circumvented if anything precedes the clitics within the clause, as shown in (4a), repeated here.

(4) a. I *mi* *go* dade Petko včera.
and me(DAT) it(ACC) gave Petko yesterday
'And Petko gave it to me yesterday.'

We can now ask what happens if *li* is added, turning Bg (4a) into a yes-no question. The result is given in (10).

(10) I dade *li ti* *go* Petko včera?
and gave Q you(DAT) it(ACC) Petko yesterday
'And did Petko give it to you yesterday?'

Curiously, as pointed out in Franks 1999b, 2000, the linearization of the pronominal clitics in (10) resembles that of (8b), with *li* but not *i*

[10] In negated yes-no questions the *li* facts are somewhat more complex; for further discussion see Rivero 1993, King 1994, Franks 1999a,b, Rudin et al. 1999, or Franks and King 2000, among others. Bošković (2000a) shows how the negated *li* facts can be accommodated in the copy-and-delete framework, but these details are not relevant to the central point of this squib.

'and', rather than that of (4a), with *i* but not *li*. We interpret this to mean that the conjunction *i* is irrelevant to determining which copy of the pronominal clitics to pronounce in (10).

Bošković (2000a) and Bošković and Franks (1999) further observe that other variants, as in (11), are impossible in Bg.

(11) a. *I *li ti go* dade Petko včera?
and Q you(DAT) it(ACC) gave Petko yesterday
'And did Petko give it to you yesterday?'
b. *I *ti go li* dade Petko včera?

In short, we are faced with two related puzzles: (a) Why is it that PF necessarily ignores *i* in (10), although it must take *i* into consideration in (4)? and (b) Why is it that, although *i* can support the pronominal clitics in (4a), it cannot similarly support enclitics in the *li* construction, as shown by the ungrammaticality of (11)?[11] In the next section we put forward a solution to these puzzles based on the theory of multiple Spell-Out.

4 Multiple Spell-Out and Phases

A system that can handle the Bg clitic-ordering paradigm readily emerges from the kind of multiple Spell-Out theory recently advanced in various forms by Epstein et al. (1998), Uriagereka (1999), and Chomsky (2000), among others. Multiple Spell-Out is the idea that information is sent to PF (and LF, although this does not concern us here) derivationally, as the structure is being built up. We further adopt here the proposal, following Chomsky (2000), that structure is sent to PF not continually, after each application of Merge/Move, but at discrete junctures in the derivation, called ''phases.'' Chomsky (2000) argues that CP but not IP (TP) is a phase, a specific claim that we will show suffices to accommodate the Bg data presented in this squib. Finally, we make one additional assumption, following Bošković (1997) and many others, that only phrase structure that is independently required is projected. For our purposes, the imposition of such an ''economy of representation'' criterion has the result that declarative clauses that lack an overt complementizer are IPs rather than CPs.[12]

We return in this light to the Bg examples. When there is no *li,* as in (4a), the clause following *i* 'and' is an IP. Since IP is not a phase, the clause will not be sent to PF until the whole structure is built, at which point the deletions in (12) obtain; compare (6).

[11] Note that (i), in which *i* supports the pronominal clitics and the verb supports *li,* is also unacceptable as a simple yes-no question in Bg (see the discussion below).

(i) *I *ti go* dade *li* Petko včera?

[12] See Bošković 1997 and references therein for empirical evidence to this effect.

(12) i [$_{IP}$ mi go dade ~~mi go~~ ~~dade~~ Petko včera][13] (= Bg (4a))

So far our adoption of the multiple Spell-Out system has no impact on the analysis. The place where the effects of the multiple Spell-Out system can be seen is with CPs preceded by *i,* such as the example in (10). Since the clause following *i* in (10) is headed by *li,* which is a complementizer, this clause must be a CP. Consider now more carefully what happens in (10). Since CP is a phase, the CP headed by *li* is sent to Spell-Out before *i* is merged into the structure. In the multiple Spell-Out system, the decision about which copy of the pronominal clitics to pronounce is thus made before *i* is merged. PF deletion as in (13b) then applies to the structure in (13a), with the same result as in (9). Only subsequently is the conjunction merged, to produce (13c).

(13) a. [$_{CP}$[$_{C}$[ti go dade] + li] ti go dade Petko včera]
b. [$_{CP}$[$_{C}$[~~ti go~~ dade] + li] ti go ~~dade~~ Petko včera]
c. i [$_{CP}$[$_{C}$[~~ti go~~ dade] + li] ti go ~~dade~~ Petko včera]

The result is that the pronominal clitics follow rather than precede the verb, since information outside the CP phase is unavailable to PF at the point when the decision about which copy to pronounce must be made. For this reason, no other conceivable order is possible, including ungrammatical variants as in (11) and example (i) of footnote 11.

The appeal to multiple Spell-Out is crucial in deriving (13). If the CP phase could be ignored, so that the grammar waited for the whole structure to be built before sending Bg *li* constructions to PF, copy chains such as the the one in (14a) would be expected. Since no PF violation takes place if the pronominal clitics and the verb are pronounced in the head of the chain, the highest copies would have to be pronounced, incorrectly deriving (14b) instead of (13c).[14]

(14) a. i [$_{CP}$[$_{C}$ ti go dade + li] ti go dade]
b. *i [$_{CP}$[$_{C}$ ti go dade + li] ~~ti go~~ ~~dade~~]

This analysis of the Bg clitic data thus provides a novel empirical argument for the multiple Spell-Out hypothesis. Under this hypothesis (more precisely, the phase-based approach to multiple Spell-Out), we do not need to stipulate the invisibility of *i* 'and' to encliticization in (10)–(11).[15] The reason why *i* is invisible to encliticization in the

[13] For the purposes of this squib no precise characterization of the status of *i* 'and' is required; it could conceivably be treated as the head of a Boolean Phrase, with no impact on the analysis. For discussion of the precise location of *mi go dade* copies, an issue that is independent of our central point, see Bošković 2000a.

[14] (14b) is actually what obtains in Mac, which is expected since in this language pronominal clitics can be proclitics and therefore can always be pronounced in the head of their chain.

[15] This type of analysis would not *explain* the facts under consideration. For an example of such an analysis, see the analysis of *wanna*-contraction in Jaeggli 1980, where it is essentially stipulated that *wh*-trace, but not PRO or NP-trace, is visible in PF; hence, only the former blocks PF contraction.

constructions in question is trivial: it is literally not there at the point when encliticization takes place. As observed by Samuel Epstein (personal communication), this kind of analysis is the most principled way of explaining why some elements paradoxically act as if they were invisible.[16]

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[16] For a recent analysis along these lines of the blocking effect that empty categories have on *wanna*-contraction, discussed briefly in footnote 15, see Boeckx 2000.

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An Idiomatic Argument for Lexical Decomposition

Norvin Richards
MIT

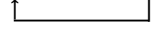
1 Boots, Creeps, Flak, and Verb Parts

Idioms have long been regarded as conforming to some kind of locality requirement constraining the relations between their parts. This requirement has taken various forms in the literature (see Marantz 1996, Nunberg, Sag, and Wasow 1994, and references cited there), and it will not be important here to develop a specific version of it; in the interests of concreteness, we might assume (1), adopted from Koopman and Sportiche 1991.

(1) If X is the minimal constituent containing all the idiomatic material, the head of X is part of the idiom.

Requirements like (1) have sometimes been used to argue that certain kinds of sentences involve more structure than is immediately apparent on the surface. For instance, given an assumption like (1), the data in (2) have been used to argue for the existence of NP-raising.

(2) a. The cat is out of the bag.
b. The cat seems ___ to be out of the bag.



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