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Prosodic Smothering in Macedonian and Kaqchikel

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This article deals with a so-far unnoticed phenomenon in prosodic phonology, which we dub *prosodic smothering*. Prosodic smothering arises when the prosodic status of a clitic or affix varies with the presence or absence of some outer morpheme. We first illustrate prosodic smothering with novel data from two genetically unrelated languages, Macedonian (Slavic) and Kaqchikel (Mayan). We then provide a unified account of prosodic smothering based on a principled extension of the theory of prosodic subcategorization (e.g., Inkelas 1990, Peperkamp 1997, Chung 2003, Yu 2003, Paster 2006, Bye 2007). Prosodic subcategorization typically involves requirements placed on items to the left or the right of the selecting morpheme. We show that prosodic smothering naturally emerges in a theory that also allows for subcategorization in the vertical dimension, such that morphemes may select for the prosodic category that immediately dominates them in surface prosodic structure. This extension successfully reduces two apparent cases of nonlocal prosodic conditioning to the effects of strictly local prosodic selection.

Keywords: prosody, morphophonology, subcategorization, Macedonian, Mayan

1 Introduction

This article is concerned with the description and analysis of a so-far unnoticed phenomenon in prosodic phonology, which we dub *prosodic smothering*. This phenomenon, illustrated schematically in (1), concerns a specific type of contexual variability in the prosody of dependent morphemes (affixes and clitics). Assume that two cooccurring morphemes, A and B, are normally realized with the prosodic structure in (1a). In this structure, morpheme A is parsed into a higher

prosodic domain than morpheme B (e.g., morpheme B might be dominated by a prosodic word ω, while morpheme A is dominated by a phonological phrase ϕ). Now assume that A and B can also cooccur with a third, outer functional morpheme **F**. In many cases, the presence of **F** will have no effect on the prosody of A and B (1b): compare, for example, English phrases like *the window* [ðə (_ω ˈwɪn.doʊ̯)] vs. *in the window* [ɪn ðə (_ω ˈwɪn.doʊ̯)] (Selkirk 1995).

(1) a. /A B/ → [_δ A [_π B]]   ($\delta \geq \pi$ on the prosodic hierarchy)
     b. /**F** A B/ → [_δ **F** A [_π B]]   (no effect of **F**)
     c. /**F** A B/ → [_π **F** A B]   (prosodic smothering of A by **F**)

But this is not the only possible outcome: as we will show, in some cases **F** can trigger restructuring of the prosodic boundary between A and B. This is prosodic smothering: in the presence of some morpheme **F**, the prosody of A and B flattens out such that all three morphemes are contained within the same domain (1c). In our terminology, morpheme **F** ''smothers'' A because the presence of **F** (an outer morpheme) has the effect of compressing A (an inner morpheme) into a lower prosodic domain than it would otherwise belong to.

The effect of smothering is to generate prosodic alternations akin to faux-English *the window* [ðə (_ω ˈwɪn.doʊ̯)] vs. *in the window* [(_ω ɪn ˈði wɪn.doʊ̯)], in which the stressability of *the* depends on the presence or absence of an outer functional morpheme. In this article, we demonstrate that prosodic smothering (1c) occurs in both Macedonian (section 2) and Kaqchikel (section 3), two genetically and geographically disparate languages.

The theoretical import of prosodic smothering resides, in part, with the notion of phonological locality. Phonological processes are typically local, in the sense that phonological interactions occur between string-adjacent elements (where ''adjacency'' may be defined over different levels of representation, such as autosegmental tiers; see Goldsmith 1990, Archangeli and Pulleyblank 1994, Gafos 1999, Hansson 2010, and references there). Indeed, one of the great insights of prosodic phonology has been the reduction of apparently nonlocal phonological interactions (such as rhythmic stress assignment) to simpler, local processes computed over abstract prosodic structure (e.g., Liberman and Prince 1977, Prince 1983, 1991, Nespor and Vogel 1986, Halle and Vergnaud 1987, Hayes 1995). In this light, prosodic smothering presents a puzzle: how is it that an outer morpheme (**F**) can condition the prosodic boundary between two other morphemes (A and B) when that outer morpheme is not itself adjacent to the boundary in question? The analytical question, then, is whether and how such apparently nonlocal interactions can be reduced to strictly local conditions on the morphemes involved.

This brings us to a second facet of prosodic smothering: in the case studies presented here, smothering is lexically idiosyncratic, being triggered by some but not all morphemes in the relevant configuration (1b–c). As we argue below, it is not in general possible to predict which morphemes will trigger smothering: the ability to induce nonlocal prosodic reparsing appears to be an arbitrary fact about individual lexical items. For reasons laid out in sections 2 and 3, we believe that the lexical specificity of smothering effects implicates *prosodic subcategorization* as a driving force behind patterns of variability like (1a)∼(1c).

Prosodic subcategorization refers to a family of theories in which dependent morphemes may select for prosodic properties of their hosts (e.g., Inkelas 1990, Peperkamp 1997, Chung 2003, Yu 2003, Paster 2006, Bye 2007). These requirements are formalized as lexical subcategorization frames that specify prosodic structure to the left or right of the selecting morpheme. By way of illustration, consider the subcategorization frames in (2b,e) (inspired by Inkelas 1990, Raffelsiefen 1999). In English, the default pattern of stress assignment for underived adjectives places primary stress on the antepenultimate syllable (2a) (we oversimplify here for expositional reasons; see Chomsky and Halle 1968, Hammond 1999 for more details). The English prefix *un-* selects for a completed prosodic word to its right (3b), and so blocks the normal pattern of antepenultimate stress found for English adjectives (3d). In contrast, the trivial subcategorization frame for *in-* (2e) places no requirements at all on its host, and so allows the otherwise expected integration of this prefix into the same prosodic word as the following stem, with concomitant antepenultimate stressing (3f).

(2) *English* un- *and* in- (after Inkelas 1990, Raffelsiefen 1999)

    a. *Default adjective stress: Antepenultimate*
        íntimate, prímitive, dérelict, ásinine, . . .

    b. *Subcategorization:* $[_\omega$ un- $[_\omega \ldots]]$

    c. $[_\omega$ ùn- $[_\omega$ fínished]]

    d. *$[_\omega$ ún-finished]

    e. *Subcategorization:* $[_\omega$ in- $[\ldots]]$

    f. $[_\omega$ ín-finite]

    g. *$[_\omega$ ìn- $[_\omega$ fínite]

The idiosyncratic stressing of *un-* and *in-* cannot be reduced to independent facts about the phonology, syntax, or semantics of these prefixes: it must somehow be stipulated as part of their lexical entries.[1] We follow Zec (2005) and many others in taking lexical subcategorization to be a simple, natural, and conceptually appropriate tool for formalizing morpheme-specific prosodic requirements of this sort.

Prosodic subcategorization is typically understood to be *lateral* and *local*. By *lateral*, we mean that prosodically dependent morphemes may subcategorize for prosodic properties of their hosts—that is, for prosodic structure occurring on either side of the morpheme itself. (1) exempli-

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[1] In the framework of Lexical Phonology and Morphology (LPM), *in-* and *un-* would be assigned to different lexical strata; this conclusion is motivated by a constellation of different morphological, phonological, and semantic properties that appear to correlate with the Level 1 vs. Level 2 distinction in English (e.g., Chomsky and Halle 1968, Siegel 1974, Allen 1979, Lieber 1980, Kiparsky 1982, 1985). However, it has long been known that these diagnostics do not correlate quite as neatly as predicted by strong versions of LPM (see Raffelsiefen 1999 for a critique). In any case, the discussion in this section is merely intended to illustrate the formal device of prosodic subcategorization: we are not committed to any particular analysis of the English prefixes *in-* and *un-*.

fies subcategorization for a following element, but enclitics and suffixes can also subcategorize for preceding elements (and there might exist elements that subcategorize for material in both directions).

By *local*, we mean that prosodic subcategorization frames may refer only to strictly adjacent elements, as discussed above. This principle is enshrined as Inkelas's (1990) *Generalized Focus Determinant Adjacency Condition* (see also Paster 2006, Embick 2010). The selectional restrictions encoded by local subcategorization frames are therefore limited to referring to a single, string-adjacent prosodic constituent. (See McCarthy and Prince 1986/1996:1, McCarthy 2003:80, Buckley 2009 for related definitions of prosodic locality.)

Less attention has been paid to the vertical dimension of prosodic subcategorization: the prosodic constituent *produced* by the attachment of a dependent morpheme to its host.[2] In nonprocedural terms, we can think of vertical subcategorization as encoding a restriction on the prosodic category that immediately dominates the selecting morpheme. For example, the subcategorization frames in (1) can be restated in terms of domination by different levels of a recursive prosodic word structure ω as in (3).

> (3) a. $[_{\omega\text{-NONMIN}}$ un- [. . .]]
>   b. $[_{\omega\text{-MIN}}$ in- [. . .]]

In (3a), the prefix *un-* subcategorizes for domination by a *nonminimal* prosodic word ω-NONMIN (a ω-level constituent that dominates one or more constituents belonging to the same ω-level).[3] This subcategorization frame effectively forces *un-* to be parsed into a recursive ω structure with its host, accounting for the exclusion of this prefix from the stress domain of the stem: $[_{\omega\text{-NONMIN}}$ ùn- $[_{\omega\text{-MIN}}$ fínished]]. In contrast, in (3b) the prefix *in-* selects for domination by a *minimal* prosodic word (i.e., a prosodic word that dominates no other prosodic word); this ensures its integration into the same stress domain as the stem, $[_{\omega\text{-MIN}}$ ín-finite]. By restricting vertical subcategorization to selection for an immediately dominating prosodic category, we ensure that the subcategorization frames in (3) retain the local character of classic lateral subcategorization.

We will argue that prosodic smothering (1) is in fact a response to the vertical subcategorization requirements imposed by certain functional morphemes. Schematically, a vertical subcategorization frame like (4) can trigger nonlocal prosodic reparsing (5c) in exactly those cases where the default prosodic structure would lead to a violation of the lexical requirements of the selecting morpheme (5b).

> (4) Vertical subcategorization for **F**: $[_{\pi}$ **F** [. . .]]

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[2] The schema that Inkelas (1990) develops for prosodic subcategorization explicitly includes the prosodic output of affixation/cliticization. However, in all the cases that Inkelas discusses this specification is essentially redundant, being predictable from other facts about the morphemes being concatenated (see pp. 112ff.).

[3] The predicates *(non)minimal* and *(non)maximal* are also locally defined structural relations. For more discussion of these notions in the context of recursive prosodic structure, see Ito and Mester 2007, 2013, Elfner 2012, and references there.

(5) a. /A B/ → [$_\delta$ A [$_\pi$ B]]   ($\delta \geq \pi$ on the prosodic hierarchy)
    b. /**F** A B/ → *[$_\delta$ **F** A [$_\pi$ B]]   (lexical requirements of **F** are not met)
    c. /**F** A B/ → [$_\pi$ **F** A B]   (prosodic smothering by **F**)

In this way, apparently nonlocal patterns of prosodic reparsing can be reduced to strictly local conditioning by vertical subcategorization. While the effect of prosodic smothering is indeed nonlocal, in that some morpheme **F** triggers a distal prosodic change, the formal mechanisms that drive reparsing are themselves strictly local in character.

We place no a priori constraints on the identity of π and δ in the schema (4)–(5) beyond the requirement that these be categories of the prosodic hierarchy. Within this framework, both vertical and lateral subcategorization are possible: whether or not smothering occurs will depend on the subcategorization requirements of a given morpheme and the context in which it appears. Prosodic subcategorization is of course needed for completely independent reasons, and as we show in section 4.1, smothering is predicted by at least two different formalizations of such morpheme-specific requirements. The question of whether and how the schema in (4)–(5) might need to be further restricted is an empirical one, which we take up briefly in sections 4 and 4.1.

Though we frame our analysis in terms of vertical subcategorization, the larger point to be made here is that purely lexical factors can dramatically impinge on prosodic parsing, even at the phrase level. This observation has both practical and theoretical consequences for research on the interface between morphosyntax and prosodic phonology. We return to these issues after establishing the empirical facts that motivate our proposal.

Section 2 analyzes the context-dependent prosody of object clitics in Western Macedonian as a prosodic smothering effect, triggered by the vertical subcategorization requirements of morphemes high in the clausal spine. Section 3 provides convergent evidence that absolutive agreement markers in Kaqchikel have a different prosodic status depending on their larger morphophonological context; this prosodic variability is then analyzed as another instance of prosodic smothering conditioned by vertical subcategorization. Section 4 discusses the theoretical implications of our proposal and concludes.

2 Macedonian

Macedonian is a South Slavic language, spoken by over 1.3 million people in the Republic of Macedonia and by minority communities in neighboring Balkan countries. In this article, we are concerned with the western dialects of Macedonian (Rudin et al. 1999, Vidoeski 2006, Tomić 2012). The clitic system of these dialects provides a straightforward case of prosodic smothering: the prosody of preverbal object clitics varies with the presence or absence of certain preceding function words. These function words are themselves prosodically dependent on a following host and are always parsed inside a relatively low prosodic domain. When object clitics cooccur with these prosodically deficient functional items, the prosodic requirements of the latter take precedence, forcing the object clitics into a lower prosodic domain than they would normally occupy. This is the essence of prosodic smothering.

Table 1
Object clitics in Macedonian

	Direct object	Indirect object
1SG	me	mi
2SG	te	ti
3SG	go (nonfem)/ja (fem)	mu (nonfem)/ì (fem)
1PL	nè	ni
2PL	ve	vi
3PL	gi	im
Reflexive	se	si

2.1 The Macedonian Clitic System

Macedonian has a system of object clitics marking person, number, and gender features of both direct and indirect objects (table 1). As illustrated in (6), these clitics are left-adjacent to tensed verbs (i.e., those that bear tense morphology but also -*l* participles; Joseph 1983).[4]

(6) a. **go**   VIde
       3SG.M.ACC see.3SG.PST
       'She/He saw him.'

    b. **go**   ZEde
       3SG.M.ACC take.3SG.PST
       'She/He took it.'

    c. toj **mu**   **go**   DAL
       he 3SG.M.DAT 3SG.M.ACC given.3SG.M
       'He gave it to him.'

    d. **sum mu**   **go**   ZEL
       am   3SG.M.DAT 3SG.M.ACC taken.1SG
       'I took it from him.'

These object clitics are strictly monosyllabic and do not carry an independent (lexically assigned) stress. In other words, they are prosodically deficient elements, parsed as something less than a full prosodic word ω (i.e., as bare syllables).[5]

    Pronominal object clitics appear in postpredicate position with all tenseless predicates (7): nontensed verbs (e.g., imperatives and most participles) and nonverbal predicates (though see Tomić 2012:65 on variation in clitic placement with tenseless predicates).

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[4] Examples are given in a romanized Macedonian orthography. Capital letters indicate stress placement, as in other work on the prosody of South Slavic clitics (e.g., Rudin et al. 1999, Tomić 2012).
[5] We assume that the minimal prosodic word ω-MIN is the domain of stress assignment in Macedonian, although little hinges on the specific category label of the stress domain (see Lunt 1952, Franks 1989, Rudin et al. 1999 for some examples of stress assignment in multiword domains).

(7) a. DAJ   **mi**   **go**
     give.IMP 1SG.DAT 3SG.M.ACC
     'Give it to me!'

   b. MIL **mi**   **e** Petko
     dear 1SG.DAT is Petko
     'Petko is dear to me.'

These constructions are largely outside the scope of the article, partly because they seem to involve different patterns of morphosyntactic constituency; see Tomić 1997, 2012:313–316, Bošković 2004, Franks 2009, and Harizanov 2014 for discussion.[6]

In the remainder of the article, we use the term *clitic* purely in its phonological sense: clitics are prosodically weak elements that cannot be parsed as independent prosodic words on their own and are typically integrated into a prosodic word with some lexical host (Selkirk 1995, Anderson 2005). Phonological clitics may or may not be ''clitics'' in a morphosyntactic sense, depending on the specifics of their morphosyntactic behavior (e.g., Zwicky 1977, Zwicky and Pullum 1983, Klavans 1995, Anderson 2005).

2.2 Stress Assignment in Macedonian

Our interest in the object clitic system of Macedonian lies in the nonuniform behavior of these clitics with respect to stress placement. Stress in the western dialects of Macedonian is regularly antepenultimate (8a–c), or initial in monosyllabic and disyllabic words (8d–e) (examples from Tomić 2012:53–59; see also Lunt 1952, Franks 1989, Idsardi 1992, Hyde 2012).

(8) a. proizVEduva 'produce (3SG.IMPFV.PRS)'
   b. proIZvede 'produce (3SG.PST)'
   c. PROizvod 'product'
   d. VOdi 'lead (3SG.IMPFV.PRS)'
   e. LIK 'figure, image'

Postpredicate clitics, just like inflectional suffixes, affect stress placement: stress is antepenultimate within the predicate-clitic complex, and so the addition of an object enclitic can trigger rightward stress shift (9) (even shifting stress entirely off the verb; see (14)).

(9) a. DOnesi
     bring.IMP
     'Bring!'

   b. doNEsi   go
     bring.IMP 3SG.M.ACC
     'Bring it!'

---

[6] Preverbal auxiliary clitics like *sum* 'am' (6d) exhibit the same prosodic behavior as preverbal object clitics, with which they form a single clitic cluster (Franks and King 2000, Tomić 2012). We focus on the object clitics here simply for the sake of convenience.

    c. doneSI   mi   go
       bring.IMP 1SG.DAT 3SG.M.ACC
       'Bring it to me!'
       (Rudin et al. 1999:551)

Assuming that stress is assigned within the minimal prosodic word, postverbal object clitics must be parsed relatively low, inside ω-MIN: [$_{\omega\text{-MIN}}$ doneSI mi go] (see Harizanov 2014 for additional arguments for this parse).

    Preverbal clitics do not generally affect stress placement. With tensed verbs, stress remains on the predicate rather than shifting to antepenultimate position within the clitic-host complex (10).

(10) a.   mi   go   DAle
         1SG.DAT 3SG.M.ACC give.3PL.PST
         'They gave it to me.'
    b. *mi GO dale
        (Rudin et al. 1999:553)

Preverbal object clitics are therefore outside the stress domain containing the verb. Nor do they receive a stress of their own, as already observed in (6). The preverbal object clitics are thus extraprosodic with respect to the domain of stress, the minimal prosodic word (see again Harizanov 2014).

(11) a.   [mi go [$_{\omega\text{-MIN}}$ DAle]]
    b.   [CLITIC(S) [$_{\omega\text{-MIN}}$ VERB]]

    A comparison with other preverbal clitics demonstrates that the stress pattern in (10) and (11) owes to the interaction between the default stress placement rule in Macedonian and prosodic structure, rather than to a blanket ban on stressed clitics (e.g., Klavans 1995). Recall that clitics do not introduce an independent lexical stress. However, nothing in principle prevents clitics from coming to bear stress as the result of regular stress assignment rules (see, e.g., Klavans 1995, Anderson 2011, where a number of cases of stressed clitics are discussed). Stressed clitics are, in fact, encountered in Macedonian. For example, the negative clitic *ne* belongs to the same stress domain as the following verb and happens to bear stress (12), even though it does not contribute a lexical stress itself. (Examples like (12) play an important part in our analysis, and we treat them in more detail in the following section.) Prepositions can also bear stress despite being prosodically deficient (13) (see also Lunt 1952:52–65). Most importantly, examples like (14) demonstrate that pronominal object clitics can in fact bear stress in certain contexts.[7] Accounting for clitic stress in these contexts is the main goal of the following sections.

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    [7] This example involves *kamo* 'where-to', which is found in the southwestern dialects of Macedonian and occurs in clauses without a lexical verb (see Rudin et al. 1999:554, Tomić 2012:194n38).

(12) [NE znam   ]
      NEG know.1SG
      'I don't know.'
      (Lunt 1952:23, Friedman 2010:254)

(13) a. [so   neVEStata]
         with bride.DEF
         'with the bride'

     b. [SO   mene]
         with me
         'with me'
         (Franks 1989, Tomić 2012:62–63)

(14) [kamo   MI   ti   e   ] knigata
      where.to 1SG.DAT 2SG.DAT be.3SG the.book
      'Where is your book, my dear little one?'
      (Tomić 2012:194)

2.3 Exceptional Clitic Stress

There are several environments in which preverbal clitics systematically receive stress, deviating from the unmarked pattern in (6) and (10) in which such clitics are invisible for purposes of stress assignment. Clauses containing sentential negation are one such environment: when the negative marker *ne* is present, preverbal object clitics form a prosodic constituent with the verb and may receive regular antepenultimate stress.

(15) a. [ne GO   vide   ]
         NEG 3SG.M.ACC see.3SG.PST
         'She/He didn't see him.'
         (Koneski 1987:167)

     b. cf. go [VIde]
         'She/He saw him.'

     c. [ne mu   GI   dava   ] [jaBOLkata]
         NEG 3SG.M.DAT 3PL.ACC give.3SG.PRS   the.apples
         'She/He is not giving him the apples.'
         (Tomić 2012:66)

     d. cf. mu gi [DAva] [jaBOLkata]
         'She/He is giving him the apples.'

Franks (1989) and Rudin et al. (1999) use the term *enlarged stress domain* for constructions in which the domain of stress assignment is larger than a single lexical word; we mark such domains with square brackets. Example (12) (*NE znam* 'I don't know') shows that the negative marker

ne may itself bear stress in such constructions and so must belong to the same stress domain as the verb and object clitics in (15), a point we return to below.[8]

The same pattern of stress assignment occurs in both root and embedded *wh*-questions. These questions may be formed with *wh*-pronouns (e.g., *koj* 'who') or adverbial *wh*-words (e.g., *kako* 'how'); we subsume these single-word *wh*-elements under the name *wh-clitic*.

(16) a. [kako SE   vikaš   ]
         how REFL call.2SG
         'What's your name?'
         (Lunt 1952:23)

    b. [koj mu   GI   dava   ] [jaBOLkata]
         who 3SG.M.DAT 3PL.ACC give.3SG.PRS   the.apples
         'Who is giving him the apples?'
         (Tomić 2012:66)

    c. [zošto mu   GO   dade   ]
         why   3SG.M.DAT 3SG.M.ACC give.3SG.PST
         'Why did you give it to him?'
         (Vidoeski 2006:21)

    d. [NE znaeš   ] [TI] [kako SE   žali   ] [za mominSKO vreme]
         NEG know.2SG.PRS   you how REFL sorrow.3SG.PRS   for maiden   time
         'You don't know how one sorrows for her maiden life.'
         (Lunt 1952:24)

    e. [NEmam   ] [što   da TI   piša   ]
         not.have.1SG.PRS   what to 2SG.DAT write.1SG.PRS
         'I have nothing to write to you about.'
         (Hendriks 1976:95)

In these Western Macedonian dialects, *wh*-clitics behave like the negative clitic *ne* in being parsed into a constituent with the verb for stress assignment (Tomić 2012:419ff.).

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[8] There is an exception to this pattern provided by the ''monosyllabic head effect'' (Franks 1989): when the verb is monosyllabic, stress placement in an enlarged stress domain is penultimate (on the syllable immediately preceding the verb) rather than antepenultimate.

(i) a. ne mu   GO   dal   ∼ *ne MU go dal
         NEG 3SG.DAT 3SG.ACC given.3SG.M
         '(He) did not give it to him.'
    b. što bi   MU   zel   ∼ *što BI mu zel
         what should 3SG.DAT taken.3SG.M
         'What should he take from him?'

We assume that the monosyllabic head effect reflects a constraint demanding that root syllables be parsed into feet (Buckley 1997, Ito and Mester 2015). Since this constraint can only be violated when antepenultimate stress occurs with a monosyllabic verb (e.g., *[što (BI mu) zel] vs. [što bi (MU zel)]), the desired effect is achieved. See also Beasley and Crosswhite 2003, Tomić 2012:66n44 for discussion, and Franks 1989:559 for the observation that trisyllabic stress domains do not necessarily exhibit the monosyllabic head effect, so that stress is either antepenultimate or penultimate.

(17) a. [KOJ   reče   ]
         who.NOM say.3SG.PST
         'Who said it?'
         (Rudin et al. 1999:557)

     b. [koMU   dade   ] [poDAroci]
         who.DAT give.2/3SG.PST   presents
         'To whom did you/she/he give presents?'
         (Tomić 2012:419)

     c. [JAS] [ne VNImavav   ] [KAJ   gazam   ]
         I   not pay.attention.1SG.PST where step.1SG.PST
         'I wasn't paying attention to where I was stepping.'
         (Lunt 1952:23)

To recap, both single-word *wh*-phrases and the sentential negation marker *ne* are included in the same stress domain as the verb and any other preverbal clitics. When these elements are in antepenultimate position in the minimal prosodic word containing the verb, they carry the stress associated with that verb (see (12), (17)).[9]

The prosodically dependent behavior of *wh*-words is quite general in Western Macedonian. Beyond the single-word *wh*-phrases shown above, certain *wh*-modifiers internal to the nominal phrase also form a stress domain with the NP that follows them.

(18) a. [kaKOV   fustan] [SAkaš   ]
         what.kind.SG.M dress   want.2SG.PRS
         'What kind of dress do you want?'
         (Tomić 2012:420)

     b. [kolKU   pari] [SAkaš   ]
         how.much money   want.2SG.PRS
         'How much money do you want?'
         (Lunt 1952:23)

Additionally, *wh*-clitics trigger the extension of stress domains in one nonquestion context, exclamatory sentences.

(19) a. [kaKO   griziš   ] [JABloka]
         which.way chew.2SG.PRS   apples
         'The way you chew apples!'

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[9] Rudin et al. (1999:556–561) report that examples like (17a–c) can also be realized with a distinct lexical stress on negation or the *wh*-word: for example, [KOJ] [REče] 'Who said it? (who.NOM say.3SG.PAST)'. This stress pattern implies some sort of semantic or pragmatic focus on negation or the *wh*-word itself. When the verb is emphasized, it may bear stress instead of the *wh*-word or negation: for example, [što da PRAvam] 'What shall I *do*? (what to do.1SG)' (Lunt 1952:24). See section 2.5 for more discussion.

b. [kolku   ME   bolit   ]
    how.much 1SG.ACC hurt.3SG.PRS
    'How (much) it hurts me!'
    (Hendriks 1976:95)

Summarizing our conclusions so far, *ne* (the marker of sentential negation) and *wh*-clitics are always in the same stress domain as the following verb (20a) (or the following NP in constructions like (18)), while preverbal object clitics are typically outside the stress domain of the following verb (20b) (see section 2.4 for an analysis of this default parse for preverbal object clitics). The crucial exception is when one or more object clitics cooccur with *ne* or a *wh*-clitic, in which case all preverbal clitic elements are integrated into a single stress domain (ω-MIN) that includes the verb (20c).

(20) a. [$_{\omega\text{-MIN}}$ ne/WH VERB]   (see (12), (17))
     b. [CLITIC(S) [$_{\omega\text{-MIN}}$ VERB]]   (see (10))
     c. [$_{\omega\text{-MIN}}$ ne/WH CLITIC(S) VERB]   (see (15), (16))

Drawing on terminology from Selkirk 1995, we will say that *ne* and *wh*-clitics are *internal clitics*, being parsed into a minimal prosodic word ω-MIN with the verb (20a). In contrast, object clitics are *external clitics* by default, standing outside the ω-MIN of the verb (20b), and are internal clitics when prosodically smothered (20c).[10]

Macedonian clitic stress thus instantiates the phenomenon of prosodic smothering, precisely as defined in section 1: the prosody of the clitic-verb complex depends on the presence or absence of some outer morpheme (*ne* or a *wh*-clitic). This appears to be a nonlocal interaction, in that the triggering morpheme is not adjacent to the prosodic boundary that undergoes restructuring. In the schema (1), π (the lower category) corresponds to ω-MIN, while δ corresponds to a higher category such as ω-NONMIN or ϕP (see footnote 16 for more discussion of this potential ambiguity).

We emphasize that these patterns are lexically idiosyncratic, being conditioned by sentential negation and clitic *wh*-words but not by other functional elements high in the clausal spine, including other clitics. Auxiliary proclitics like *k'e* and modal particles like *da* do not trigger an enlarged stress domain (21a–d). Nor does the interrogative enclitic *li* (21e–f) (on which, see Rudin et al. 1999:552). Proclitic complementizers (21g–h) are similarly inert for the assignment of stress.

(21) a. k'e se   [VENča   ]
         will REFL marry.3SG
         'He will get married.'
         (Lunt 1952:23)
     b. *[k'e SE venča]

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[10] Our term *external clitic* encompasses both the *affixal clitics* and *free clitics* defined in Selkirk 1995. In the two cases analyzed here (Macedonian and Kaqchikel), we lack evidence that would allow us to distinguish free and affixal parses for external clitics. For that reason, we have chosen to unify these two classes under a single term. See also footnote 16.

   c. [SAka   ] da se [VENča   ]
       want.3SG.PRS to REFL marry.3SG
       'She/He wants to get married.'
       (Lunt 1952:23)

   d. *[SAka] [da SE venča]

   e. [doNEsuvaš   ] li
       bring.2SG.PRS Q
       'Are you bringing (it)?'
       (Rudin et al. 1999:552)

   f. *[doneSUvaš li]

   g. deka [DOšol   ]
       that   come.3SG.PST
       'that he came'
       (Franks 1987:129)

   h. *[deKA došol]

Likewise, *wh*-words that introduce adjunct clauses (including restrictive and nonrestrictive relative clauses) do not trigger extended stress domains, even though their homophonous counterparts in questions and exclamatory sentences do. This is illustrated, for example, by the contrast between questions (22), in which stress shifts leftward onto the *wh*-word, and adjunct clauses (23), in which stress remains on the verb while the *wh*-word procliticizes to it (Koneski 1987: 168–169).

(22) a. [koGA dojde   ] [TOJ]
       when come.3SG.PST   he
       'When did he come?'

    b. [KAJ   saka   ] da [Odi   ] [TOJ]
       where want.3SG.PRS to go.3SG.PRS   he
       'Where does he want to go?'

(23) a. koga [DOJde   ] [TOJ], [TEbe] te   [NEmaše   ]
       when come.3SG.PST he   you.ACC 2SG.ACC not.have.3SG.PST
       'When he came, you weren't there.'

    b. kaj [SAka   ] [NEka] [Odi   ]
       where want.3SG.PRS let   go.3SG.PRS
       'Let him go where he wants (to go).'

Similarly, when the *wh*-word *što* 'that' introduces a relative clause, it procliticizes to the verb but does not trigger stress domain extension, as the following examples show:

(24) a. [prviOT čovek], što se [KAžuva   ] [Adam]
       the.first man   who REFL call.3SG.PRS Adam
       'the first man, who is called Adam'
       (Lunt 1952:105)

b. [poLIcata], što [BIla   ] nad [KAtot   ]
   the.rack   that be.3SG.F.PST over the.floor
   'the rack that was over the floor'
   (Lunt 1952:109)

The example in (25) further illustrates the distinct behavior of *wh*-words in questions and nonques-
tions with respect to the position of stress. Here, the adverbial adjunct clause introduced by *koga*
'when' and the relative clause introduced by *što* 'that' do not trigger extension of the stress
domain, while the *wh*-question word *kakvo* 'what (kind)' does.

(25) koga ke ni   se [ROdi   ] [DEtevo] što go   [NOsam   ]
     when will 2PL.DAT REFL be.born.3SG.PRS baby   that 3SG.ACC carry.1SG.PRS
     [VO mene], [kakVO   ime] ke mu   [KLAdeme]
      in me   what.3SG.N name will 3SG.DAT put.1PL.PRS
     'When the baby I'm carrying is born, what name are we going to give him?'
     (Lunt 1952:109)

These distinct behaviors can be understood in terms of the featural specification of each
class of *wh*-words. We assume that *wh*-words in questions and exclamatives are specified as
[+Q, +WH], while other *wh*-words are specified as [−Q, +WH] (e.g., Chomsky and Lasnik 1977,
Grimshaw 1979; see Manetta 2011 for a recent defense of such a feature system).[11] The [+Q]
wh-words idiosyncratically extend stress domains, while the [−Q] *wh*-words—despite being ho-
mophonous with their [+Q] counterparts—do not. In Selkirk's (1995) terminology, [+Q] *wh*-
words are internal clitics (inside the same stress domain as the verb), while [−Q] *wh*-words are
external clitics (like object clitics and other non-*wh* clausal clitics) and as a result are systematically
unstressed.

The failure of [−Q] *wh*-words to trigger expansion of a following stress domain is unlikely
to be due to a systematic difference in their structural position: while relative *što* can be considered
a complementizer (occupying a distinct position from the [+Q] *wh*-phrase *što* in, e.g., (16e)), all
other *wh*-words introducing adjunct and relative clauses have been argued to occupy Spec,CP,
the same position their [+Q] counterparts occupy in root and embedded questions (Rudin 2015).

Our overall conclusion is that the distinctive prosodic behavior of sentential negation and
clitic *wh*-words in Macedonian cannot be reduced to the syntactic position or the semantic function
of these items.[12] The expanded stress domains associated with these function words must be

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[11] The feature [±Q] simply reifies the distinction between interrogative *wh*-clauses, which are usually taken to be
alternative-denoting (Hamblin 1973, Groenendijk and Stokhof 1984), and *wh*-relatives (including adjunct relatives), which
are usually taken to be property-denoting (Montague 1973, Caponigro 2004). There is independent semantic evidence to
include *wh*-complements like (16d) and *wh*-exclamatives like (19) in the [+Q] category. While these constructions do
not involve a questioning speech act, their semantic properties require that they be alternative-denoting like bona fide
questions (unlike *wh*-relatives; e.g., Lahiri 2002, Zanuttini and Portner 2003).
[12] Note that [+Q] and [−Q] *wh*-items differ phonologically *only* in how they are integrated into the larger prosodic
structure, and not in their internal, segmental phonology. This is yet another reason for formalizing the prosodic behavior
of [+Q] and [−Q] *wh*-items in terms of subcategorization (26), as their differential patterning cannot be reduced to
independent facts about their phonological content.

determined arbitrarily, through some type of lexical specification. We propose that prosodic subcategorization provides exactly the right notion of lexical idiosyncrasy needed for an analysis of exceptional clitic stress in Macedonian.

2.4 Analysis: Vertical Subcategorization

Vertical subcategorization (section 1) offers a fairly simple analysis of exceptional clitic stress in Macedonian. We argued above that the prosodic idiosyncrasies of sentential negation and *wh*-clitics in Macedonian must be lexically specified. We implement such lexical specification in (26) using the vertical subcategorization format from section 1. Specifically, both sentential negation *ne* and *wh*-clitics select for an immediately dominating minimal prosodic word (i.e., they are internal clitics). When this subcategorization is satisfied, *ne* and [+Q] *wh*-clitics will be in the same stress domain as a following verb ((12), (17), etc.).

(26) a. $[_{\omega\text{-MIN}}$ ne $[\,\ldots\,]]$
     b. $[_{\omega\text{-MIN}}$ WH$_{[+Q]}$ $[\,\ldots\,]]$

As these clitics make no specific demands on the prosodic category of their hosts, apart from the requirement that both be contained in the same ω-MIN, we leave the category of the inner bracket unspecified (i.e., there is no lateral subcategorization for prosodic category in this case).

The subcategorization frames (26a–b) also explain why the presence of *ne* or a *wh*-clitic causes preverbal object clitics to be parsed into a stress domain with the verb. *Ne* and *wh*-clitics must belong to the same minimal prosodic word as their hosts, lest the subcategorization frames (26a–b) be violated. The host is identified as the prosodic constituent that immediately follows the function word in question. When the host is a verb and no other clitics are present (as in (12) and (17)), no significant problem arises: *ne* or the *wh*-clitic is simply parsed into the same stress domain (ω-MIN) as the verb.

However, what if the morpheme that follows *ne* or a *wh*-clitic is *itself* a clitic rather than a verb?[13] By default, preverbal object clitics are parsed outside of the minimal prosodic word (i.e., they are external clitics; section 2.2).

(27) [CLITIC(S) $[_{\omega\text{-MIN}}$ VERB]]

But in configurations of this type, the subcategorization requirements of *ne/wh*-clitics cannot be satisfied: there is no possible way for *ne* or a *wh*-clitic to be added to this structure while also being parsed into the same minimal prosodic word as its host (the following clitic) when the host itself is completely external to the ω-MIN level.

(28) *[ne/WH CLITIC(S) $[_{\omega\text{-MIN}}$ VERB]]

In such cases, the selectional requirements of *ne* and *wh*-clitics take precedence over default prosodic parsing as in (27): to satisfy the subcategorization frames (26a–b), the stress domain of the verb is expanded to include preverbal object clitics along with *ne* and/or any *wh*-clitics.

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[13] Because of ordering constraints on clitics in Macedonian, the only possible interveners are object and/or auxiliary clitics (see Franks and King 2000).

(29) [$_{\omega\text{-MIN}}$ ne/WH CLITIC(S) VERB]

This extension of the ω boundary allows *ne* and *wh*-clitics to be parsed into the same minimal ω as their hosts.

(30) a. go   [$_{\omega\text{-MIN}}$ VIde   ]
          3SG.M.ACC   see.3SG.PST
          'She/He saw him.'
      b. [$_{\omega\text{-MIN}}$ ne GO   vide   ]
                  NEG 3SG.M.ACC see.3SG.PST
          'She/He didn't see him.'
      c. *ne go [$_{\omega\text{-MIN}}$ VIde]
      d. *[$_{\omega\text{-NONMIN}}$ ne go [$_{\omega\text{-MIN}}$ VIde]]

Stress on the object clitics is incidental here, and arises only because the preverbal object clitics intervene between the selecting morpheme (*ne* or the *wh*-clitic) and the nearest host that can satisfy the selectional requirements of that morpheme. This is prosodic smothering: the prosodic demands of *ne* or *wh*-clitics force any following clitics into a lower prosodic domain than they would otherwise belong to. In this case, prosodic subcategorization trumps the default syntax-prosody mapping otherwise responsible for determining stress domains.[14]

Finally, we note that the dominance requirement of *ne/wh*-clitics (26) would also be satisfied by a parse like *[NE] [ZNAeš] 'NEG know.2SG.PRS' in which the prosodically deficient clitic *ne* has been strengthened to an independent prosodic word and bears its own stress. But such a parse would not satisfy the *adjacency* requirement of (26), which states that these clitics must lean on something to their right. The upshot is that the selectional requirements in (26) require that *ne/wh*-clitics be parsed into (and immediately dominated by) the very same minimal prosodic word ω-MIN as their host. Given that *ne* and *wh*-clitics are stressed as a unit with the following verb (15)–(16), this is the correct result.

In (31)–(32), we provide a more formally explicit analysis, couched in Optimality Theory (Prince and Smolensky 2004) and illustrated with example (15c). We adopt two constraints from Selkirk 1995: ALIGN-L(LEX, ω), which requires the left edge of every lexical word to coincide with the left edge of some minimal prosodic word; and ALIGN-R(ω, LEX), which requires the right edge of every minimal prosodic word to coincide with the right edge of a lexical word (see also Anderson 2005, Werle 2009). Constraints of the SUBCAT(**F**) family are violated whenever the prosodic subcategorization of item **F** is not met in the output (here, the subcategorization

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[14] Without further elaboration, our account of exceptional clitic stress (30) does not extend to multiword stress domains in Macedonian that involve only lexical words, such as numeral expressions like [PET dena] 'five days' (Lunt 1952). By their very nature, subcategorization frames are item-specific and do not flexibly generalize to other morphemes or constructions. However, while there are clear parallels across different types of multiword stress domains in Macedonian (such as the monosyllabic head effect; footnote 8), it is unlikely that prosodic subcategorization drives stress domain extension in these cases, as the participating items are lexical words that are not generally prosodically dependent. In any event, previous work on this topic has been largely observational: to our knowledge, no one has even attempted to unify the behavior of negation and *wh*-clitics with other enlarged stress domains in Macedonian.

frame for *ne*, (26a); see also Bonet, Lloret, and Mascaró 2007).[15] Tableau (31) shows how these alignment constraints derive the ''default'' prosody of preverbal object clitics, which are un-stressable (and so ω-MIN-external) in the absence of *ne* or *wh*-clitics. Tableau (32) demonstrates how alignment constraints interact with the subcategorization requirements of *ne* to yield prosodic smothering.[16]

(31)

mu gi [V dava] [DP jabolkata]	Subcat(ne)	Al-R(ω, Lex)	Al-L(Lex, ω)
a. ☞ {$_\phi$ mu gi [$_{\omega\text{-MIN}}$ DAva]} [$_{\omega\text{-MIN}}$ jaBOLkata]			
b. ☞ [$_{\omega\text{-NONMIN}}$ mu gi [$_{\omega\text{-MIN}}$ DAva]] [$_{\omega\text{-MIN}}$ jaBOLkata]			
c. [$_{\omega\text{-MIN}}$ mu GI dava] [$_{\omega\text{-MIN}}$ jaBOLkata]			*! W
d. [$_{\omega\text{-MIN}}$ MU gi] [$_{\omega\text{-MIN}}$ DAva] [$_{\omega\text{-MIN}}$ jaBOLkata]	*! W		

(32)

ne mu gi [V dava] [DP jabolkata]	Subcat(ne)	Al-R(ω, Lex)	Al-L(Lex, ω)
a. ☞ [$_{\omega\text{-MIN}}$ ne mu GI dava] [$_{\omega\text{-MIN}}$ jaBOLkata]			*
b. {$_\phi$ ne mu gi [$_{\omega\text{-MIN}}$ DAva]} [$_{\omega\text{-MIN}}$ jaBOLkata]	*! W		L
c. [$_{\omega\text{-NONMIN}}$ ne mu gi [$_{\omega\text{-MIN}}$ DAva]] [$_{\omega\text{-MIN}}$ jaBOLkata]	*! W		L
d. [$_{\omega\text{-MIN}}$ NE mu gi] [$_{\omega\text{-MIN}}$ DAva] [$_{\omega\text{-MIN}}$ jaBOLkata]		*! W	L

The effect of Subcat(ne) is to eliminate candidates that parse this clitic outside the minimal prosodic word containing the verb, either by excluding *ne* from the ω level entirely (32b) or by integrating it into a recursive ω structure (32c). This morpheme-specific prosodic effect arises

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[15] In section 4, we comment on morpheme-specific alignment constraints, another common device for capturing item-specific prosodic requirements (e.g., Kim 2010 and references there).

[16] The constraints in tableau (31) result in a tie between parse (a) and parse (b). Since we do not have empirical evidence that distinguishes between these two options—the language does not provide diagnostics to distinguish the left edge of a phonological phrase and the left edge of a nonminimal prosodic word—we opt for an analysis that gives both parses equal standing. If it turns out that only one of these parses is actually attested, there must be other constraints (in addition to the ones included in tableau (31)) that disfavor its competitor.

precisely because a morpheme-specific constraint (SUBCAT(ne)) dominates the general constraints responsible for default prosodic parsing (in other words, this is an instance of a Pāṇinian special-general relation; see, e.g., Anderson 1969, 1974, Kiparsky 1973, Prince and Smolensky 2004, Baković 2013).

The optimal candidate (32a) satisfies the subcategorization requirements of *ne* through prosodic smothering: the prosodic word corresponding to the verb is extended leftward to encompass both *ne* and the intervening object clitics. But there are other conceivable responses to the prosodic dilemma presented by *ne*. One is that *ne* (or a *wh*-clitic) could appear in a minimal prosodic word containing the object clitics but not the verb: this is candidate (32d), in which the clitic string constitutes an independent ω and the verb retains its own stress. However, this hypothetical outcome includes a prosodic word that contains only functional material. It is typically assumed that prosodic words are licensed by virtue of their association with a lexical word. We express this requirement through the alignment constraint ALIGN-R(ω, LEX), which penalizes prosodic words that do not have a lexical word at their right edge. This constraint is responsible for eliminating candidate (32d).[17]

2.5 Alternative Approaches to Item-Specific Prosody

2.5.1 Lateral Subcategorization and Prosodic Prespecification
We have so far assumed that vertical subcategorization is needed to express the item-specific prosodic requirements that drive prosodic smothering in Macedonian. In this section, we defend that assumption against two alternative formalizations of item-specific prosody: lateral subcategorization and prosodic prespecification.

Lateral subcategorization refers only to the prosody of those elements adjacent to the selecting morpheme, that is, to the prosody of the dependent morpheme's host. To capture the fact that *ne*

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[17] Another strategy for satisfying the prosodic subcategorization requirements (26a–b) would be to reorder *ne* or the *wh*-clitic with respect to any preverbal clitics (ib,d). Such configurations would meet the selectional requirements of *ne* and the *wh*-clitic while leaving the pronominal object clitics outside the domain of stress, as dictated by the default prosodic mapping.

(i) a. [$_{\omega\text{-MIN}}$ ne GO   vide]   (cf. (30b))
            NEG 3SG.M.ACC see.3SG.PST
     'She/He didn't see him.'
  b. *go [$_{\omega\text{-MIN}}$ NE vide]
  c. [$_{\omega\text{-MIN}}$ kako SE   vikaš]   (cf. (16a))
          how REFL call.2SG
     'What's your name?'
  d. *se [$_{\omega\text{-MIN}}$ kaKO vikaš]

While our account does predict that patterns like (ib,d) should be possible in *some* language, they can very easily be ruled out in the specific case of Macedonian. It is clear that the unmarked word order in Macedonian (as elsewhere) would be one that transparently reflects syntactic dominance relations, with words/morphemes preceding the words/morphemes that they asymmetrically c-command (e.g., Kayne's (1994) Linear Correspondence Axiom). To dispense with the ungrammatical reorderings in (ib,d), we might implement this preference with a constraint requiring a transparent mapping between dominance/c-command relations and linear order (see López 2009, Elfner 2012 for this idea in an Optimality Theory context).

and *wh*-clitics attach low, inside the same minimal prosodic word as the following host, one could assume the subcategorization frames in (33).

(33) *Lateral subcategorization frames for* ne *and* wh-*clitics (to be rejected)*
    a. [ne [$_\sigma$ . . .]]
    b. [WH$_{[+Q]}$ [$_\sigma$ . . .]]

These frames should be interpreted as selecting for a syllable to the right, with no other prosodic boundary intervening between *ne* or a *wh*-clitic and its host. Such frames could conceivably generate examples like *NE znam* 'NEG know.1SG; I don't know' (12), in which the selecting clitic is parsed into a stress domain with the verb. But these frames are utterly unable to generate prosodic smothering. The essential problem is that frames like (33) will be satisfied by having *ne* or a *wh*-clitic lean directly on a following object clitic, without any reparsing of the prosodic word that dominates the verb. These frames are effectively indifferent with respect to the prosodic category that dominates the selecting morpheme: they do not distinguish between clitic strings contained in a ω-MIN (34a,d), ω-NONMIN (34c), ϕP (34b), or any other category. Without some explicit sensitivity to the prosodic constituent produced by attaching *ne* or a *wh*-clitic to its host, subcategorization simply cannot derive prosodic smothering. (L-SUBCAT(ne) in (34) is shorthand for the lateral subcategorization frame (33).)

(34)

ne mu gi [$_V$ dava] [$_{DP}$ jabolkata]	L-SUBCAT(ne)	AL-R(ω, LEX)	AL-L(LEX, ω)
a. ☺ [$_{\omega\text{-MIN}}$ ne mu GI dava] [$_{\omega\text{-MIN}}$ jaBOLkata]			*!
b. ☞ {$_\phi$ ne mu gi [$_{\omega\text{-MIN}}$ DAva]} [$_{\omega\text{-MIN}}$ jaBOLkata]			
c. ☞ [$_{\omega\text{-NONMIN}}$ ne mu gi [$_{\omega\text{-MIN}}$ DAva]] [$_{\omega\text{-MIN}}$ jaBOLkata]			
d. [$_{\omega\text{-MIN}}$ NE mu gi] [$_{\omega\text{-MIN}}$ DAva] [$_{\omega\text{-MIN}}$ jaBOLkata]		*!	

The second alternative we consider exploits the notion of prosodic prespecification (Idsardi 1992, Halle and Idsardi 1995, Özçelik 2014, and references there). Assume that *ne* and *wh*-clitics are lexically specified with a left ω-MIN boundary: for example, /[$_{\omega\text{-MIN}}$ ne/. If this open constituent must be closed by a corresponding right-edge ω boundary in the surface phonology (Halle and Vergnaud 1987), we might expect prosodic smothering as in (35).

(35) /[$_{\omega\text{-MIN}}$ ne   go   vide/   → [$_{\omega\text{-MIN}}$ ne GO vide]
           NEG 3SG.M.ACC see.3SG.PST
    'She/He didn't see him.'

The principal difficulty for this approach comes from constructions with multiple triggers, in which a *wh*-clitic is followed by *ne*. Stress assignment in multiple-trigger constructions is exactly

parallel to that in single-trigger constructions (36b–c) and therefore implicates exactly the same flat ω-MIN structure (penultimate stress is also possible in these forms; see footnote 8).[18]

(36) a. [$_{\omega\text{-MIN}}$ ŠTO ne   zel]
         what NEG take.3SG.PST
    'What didn't he take?'
    (Victor Friedman, pers. comm.)
  b. [$_{\omega\text{-MIN}}$ NE bi   dal]
         NEG would given.3SG.M
    'He should not have given.'
  c. [$_{\omega\text{-MIN}}$ KOJ go   zel]
         who 3SG.M.ACC take.3SG.PST
    'Who took it?'
    (Franks 1989:559)

The prosody of these constructions is as predicted by vertical subcategorization (37a): the entire clitic string is parsed into a single stress domain (ω-MIN), thereby satisfying the selectional requirements of both triggering clitics simultaneously (all selecting morphemes are parsed into the same ω-MIN as their hosts).[19] (For formal verification of this claim, see tableau (89).)

One might wonder whether the stress pattern in (36a) reflects some kind of pragmatic or discourse emphasis on the *wh*-clitic *što* 'what' (as Victor Friedman has, in fact, suggested to us). Even so, evidence from the interaction between stress and emphasis in other contexts confirms that we are dealing with a single ω-MIN in (36a). Certain kinds of emphasis—variously called ''semantic emphasis'' (Rudin et al. 1999:560–562), ''formal or semantic'' prominence (Elson 1993), emphasis of the ''meaning'' of the relevant word (Lunt 1952:24), ''contrastive'' marking (Tomić 2001:sec. 3), or ''special logical emphasis'' (Koneski 1987)—can indeed trigger stress shift within the stress domain containing the verb. This is illustrated in (37) (see also footnote 9,

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[18] Descriptive sources on Macedonian often claim that [WH ne CLITIC VERB] constructions have two distinct stresses, as in *ZOšto ne ME skorna* 'Why didn't you wake me? (why NEG 1SG.ACC wake.2SG)' (Garde 1968:36 and many works citing it, such as Groen 1977, Elson 1993; see also Hendriks 1976:88–95). However, the examples given in these works are all reason questions, and the Macedonian equivalent of *why* is plausibly bimorphemic, that is, *zo* + *što* 'what'. Since internally complex *wh*-expressions in Western Macedonian carry a separate stress for independent reasons (18), we doubt that reason questions are probative regarding the prosody of two-trigger constructions. In any case, these examples may be contaminated by the factors illustrated in (37)–(38), as single-stressed examples like *zaš ne GO zede* 'Why didn't she/he take it? (why NEG 3SG.ACC take.3SG)' can also be found in texts (Hendriks 1976:248).

[19] While Macedonian allows multiple *wh*-questions like *koj što dobi* 'Who got what? (who what get.3SG.AOR)' (Tomić 2012:425), we do not know where stress falls in questions with more than one preverbal *wh*-clitic. The issue is complicated by the observation that ''question words are always focused'' in a general semantic sense (Rudin et al. 1999:561), making it difficult to control for the nonphonological factors that affect stress assignment in Macedonian. A further difficulty is that the preverbal position is often a position of focus for DPs and other constituents (e.g., Tomić 2012:218–220). Our account predicts the same pattern of default stress assignment for multiple *wh*-questions as for [WH ne VERB] constructions like (36a).

Garde 1968, Hendriks 1976:89). In this case, stress shifts rightward onto the verb, falling on the penultimate syllable in the stress domain.

(37) a. toj [ne   MU   reče   ]
        he   NEG 3SG.DAT tell.3SG.PST
        'He didn't tell him.'
    b. toj [ne mu REče]
        'He didn't *tell* him.' (''presupposes a certain consequence''; Koneski 1987:167)
        (Koneski 1987:167–168)

Ne and *wh*-clitics can also carry stress-attracting emphasis. But the prosody of such constructions is importantly different from that of those that involve verbal emphasis: here, we observe two distinct stresses (38), one falling on the verb and one falling on the emphasized clitic. (Elson (1993) offers a different characterization of this pattern that is nonetheless consistent with our general argument.)

(38) a. [KOJ] [mu   REče   ], samo da znam
          who   3SG.M.DAT tell.3SG.PST only to know.1SG.PRS
         'If I only knew who told him!'
         (Koneski 1987:sec. 102)
    b. #[KOJ mu reče]/#[KOJ] mu reče
    c. toj [NE] [mu   REče   ]
        he   NEG   3SG.M.DAT tell.3SG.PST
       'He *didn't* tell him (I insist).'
       (Koneski 1987:167–168)
    d. #[NE mu reče]/#[NE] mu reče

These examples demonstrate that the *wh*-clitic *što* 'that' in (36a) does not carry stress-attracting emphasis. If it did, we should find two distinct stresses: #[$_{\omega\text{-MIN}}$ ŠTO] [$_{\omega\text{-MIN}}$ NE zel]. We thus conclude that examples like [$_{\omega\text{-MIN}}$ ŠTO ne zel] (36a) reflect the prosodic structure of two-trigger constructions in which neither trigger carries a stress-attracting emphasis. (While *wh*-words may be inherently discourse-prominent, this type of pragmatic prominence does not appear to interact with stress placement, (36a); see Rudin et al. 1999:560n20).[20]

   This result is difficult to guarantee through prosodic prespecification. To account for prosodic smothering with single-trigger cases, it must be assumed that *ne* and all *wh*-clitics come with a prespecified left ω-MIN boundary in their lexical representations. Given that the two-trigger forms

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[20] Interesting questions of course remain about the interaction between discourse pragmatics and stress in two-trigger constructions. For example, emphasis on the second trigger seems to result in just a single stress within the verbal complex: *koj ŠTO zel* 'Who bought *what*?' and *što NE zel* 'What *didn't* he take?' (Victor Friedman, pers. comm.). Since the existence of such patterns does not affect our basic claim that the stress pattern of (36a) is neutral or default (in lacking ''emphasis'' of the relevant sort), we do not attempt to account for them here.

in (38) consist of just a single prosodic word, it follows that underlyingly specified prosodic boundaries need not persist into the surface (perhaps they are deleted under domination from constraints like ALIGN-R(ω, LEX), which would penalize parses like [$_{\omega\text{-MIN}}$ ŠTO] [$_{\omega\text{-MIN}}$ NE zel]). But this raises a puzzle: if underlying ω-MIN boundaries may be deleted, why would an exhaustive ω-MIN parse like [$_{\omega\text{-MIN}}$ ŠTO ne zel] be favored over a nonexhaustive ω-MIN parse like [što [$_{\omega\text{-MIN}}$ NE zel]]?[21] Both parses delete a prespecified ω-MIN boundary, but the nonexhaustive parse has the further virtue of excluding the initial *wh*-clitic from the domain of stress (recall that, in the general case, preverbal clitics are excluded from stress domains in Macedonian). Without further stipulation, prosodic prespecification cannot account for the stress profile of two-trigger constructions like those in (38).[22] In contrast, this result is easy to guarantee under vertical subcategorization, as prosodic structures like those in (38) fully satisfy the subcategorization requirements of both smothering triggers.

There is another theoretical device that merits consideration here: morpheme-specific alignment constraints could, in principle, be used to model the prosodic selectional requirements of *ne* and *wh*-clitics in Macedonian (McCarthy and Prince 1993, Kim 2010, Pater 2010). The comparison between vertical subcategorization and morpheme-specific alignment is subtle, and so we defer the comparison of these formalisms to section 4.1.

2.5.2 Against a Syntactic Analysis of Clitic Stress   To close, we consider the viability of a more syntactically oriented analysis of exceptional clitic stress in Western Macedonian. Is it possible that the different prosodic parses found in the presence and absence of *ne* and *wh*-clitics result directly from a difference in the underlying syntax (see also Tomić 2001)? For instance, the observed prosodic differences might correspond to a difference in whether the object clitics form a complex head with the verb. On the assumption that complex syntactic heads ($\approx$ morphological words) map to minimal prosodic words, adopting a complex head structure in constructions with *ne* or *wh*-clitics would generate the desired prosodic output. Concretely, we might suppose that the verb raises to the polarity head Σ^0 (Laka 1990) when *ne* is present, picking up the pronominal object clitics on the way (39b). When *ne* is absent, verb raising must not occur (39a).

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[21] Depending on one's assumptions about how underlying ω-MIN boundaries should be closed on the surface, a recursive parse like [$_{\omega\text{-NONMIN}}$ što [$_{\omega\text{-MIN}}$ NE zel]] might be favored for a second reason, namely, that the initial ω-MIN boundary persists despite not being strictly minimal on the surface.

[22] Beasley and Crosswhite (2003) propose a derivational account of Macedonian stress that could successfully generate antepenultimate stress in two-trigger forms like (36a). Since our focus is on parallelist Optimality Theory models of Macedonian prosody, we defer a full comparison with Beasley and Crosswhite's proposal till another occasion. However, we note that the analysis developed by Beasley and Crosswhite presupposes that *wh*-clitics are morphologically affixed to their verbal hosts (see, e.g., Kiparsky 1982, Booij and Rubach 1987, Halle and Vergnaud 1987, Halle and Idsardi 1995). This cannot be correct, given that *wh*-clitics can be separated from the verb by adverbs and parentheticals.

(i) koj   kogo,   spored   tebe,   pretepa
    who whom.ACC according you.ACC   beat.3SG.AOR
    'Who, according to you, beat whom?'
    (Tomić 2012:427)

(39) a. [$_{\Sigma P}$ [$_{VP}$ go vide]] → [go [$_{\omega\text{-MIN}}$ VIde]]

     b. [$_{\Sigma P}$ ne [$_{VP}$ go vide]] → [$_{\omega\text{-MIN}}$ ne GO vide]

For *wh*-clitics, one might assume roll-up verb raising to C^0 (or Spec,CP; Matushansky 2006, Bayer and Brandner 2008) in *wh*-questions and exclamatives, but not other clause types.

While this approach might be technically workable (though less obviously so in the case of *wh*-clitics), it is unclear why verb movement through the positions hosting object clitics would occur only in the presence of *ne* or a *wh*-clitic but not otherwise. Furthermore, there is no independent morphosyntactic evidence that head movement is triggered by *ne* and *wh*-clitics but not by other higher clausal elements like auxiliaries and complementizers (many of which are themselves proclitics). In other words, there is no evidence at all (as far as, e.g., word order is concerned) that the syntax of preverbal object and auxiliary clitics is different in the context of higher negation and *wh*-clitics.

Note, in addition, that clitic *wh*-elements exhibit the same prosodic behavior in a different syntactic context: as (18) demonstrates, prosodically dependent *wh*-words lean on the element to their right even in complex *wh*-expressions where the host for the *wh*-clitic is an NP complement rather than the verb (e.g., [$_{\omega\text{-MIN}}$ kolKU pari] 'how much money'). Not only would these patterns of stress assignment require a separate explanation—perhaps N^0- to D^0-raising occurs in complex *wh*-expressions?—one must also assume that verb raising does *not* occur in these contexts, lest the verb be incorrectly integrated into the same prosodic word as the complex *wh*-expression (e.g., *[$_{\omega\text{-MIN}}$ kolku paRI sakaš]; cf. (18)). On balance, this syntactic counteranalysis offers at best a fragmentary and stipulative account of the facts. Therefore, we believe that syntax-oriented approaches should be viewed unfavorably in comparison to the more holistic explanation offered by prosodic subcategorization.

Having completed our discussion of Macedonian, we now extend our proposals to a similar pattern of prosodic variability in Kaqchikel.

3 Kaqchikel

Kaqchikel is a K'ichean-branch Mayan language spoken by over half a million people in the central highlands of Guatemala (Richards 2003). As in Macedonian, in Kaqchikel the prosody of verbal agreement morphology is conditioned by the presence or absence of higher functional elements. Specifically, absolutive agreement markers behave as internal clitics on tensed verbs (where aspect is overtly marked), but as external clitics on nonverbal predicates (which lack overt aspect marking). In this section, we argue for a parallel treatment of Kaqchikel, which, like Macedonian, instantiates prosodic smothering: the phonological subcategorization requirements of verbal aspect markers trump the default prosodification of absolutive agreement.

3.1 Person Agreement in Kaqchikel

Kaqchikel, like all Mayan languages, has a system of verbal agreement in which core arguments (subjects and direct objects) are cross-referenced by agreement morphology on the verb. Verbal

agreement follows an ergative-absolutive pattern of alignment: the absolutive (ABS) markers index transitive objects, as well as subjects of intransitives and aspectless nonverbal predicates (40); the ergative (ERG) markers index transitive subjects, as well as nominal possessors (41).[23]

(40) *Absolutive marking in Kaqchikel*

    a. y-**ix**-ki-tz'ët
       INCPL-**2PL.ABS**-3PL.ERG-see
       'They see **y'all**.'

    b. x-**ix**-anin
       CPL-**2PL.ABS**-run
       '**Y'all** ran.'

    c. **ïx**   tijonel-a'
       2PL.ABS teacher-PL
       '**Y'all** are teachers.'

(41) *Ergative marking in Kaqchikel*

    a. y-a-**qa**-q'etej
       INCPL-2SG.ABS-**1PL.ERG**-hug
       '**We** hug you.'

    b. **qa**-jolom
       1PL.ERG-head
       '**our** head'

In Kaqchikel, ERG and ABS markers (see table 2) always precede their hosts. In this respect, Kaqchikel differs from those Mayan languages in which ABS follows its host in at least some contexts (e.g., Tsotsil; Aissen 1987, Woolford 2011).

Table 2
Predicate agreement markers in Kaqchikel

	Ergative (Pre-C/Pre-V)	Absolutive (Pre-C/Pre-V)
1SG	in-/inw-	i-/in-
2SG	a-/aw-	a-/at-
3SG	ru-/r-/u-	Ø
1PL	qa-/q-	öj-
2PL	i-/iw-	ïx-
3PL	ki-/k-	e-/e'-

[23] All Kaqchikel examples are given in standard Mayan orthography. The orthography is fairly shallow, hewing closely to phonemic form. Most symbols have their IPA values, with the following exceptions: ⟨V̈⟩ = lax (centralized) vowel, ⟨C'⟩ = glottalized consonant, ⟨tz⟩ = [t͡s], ⟨x⟩ = [ʃ], ⟨ch⟩ = [t͡ʃ], ⟨j⟩ = [χ], ⟨y⟩ = [j], ⟨'⟩ = [ʔ] (except in ⟨C'⟩).

As a matter of orthographic convention, ABS markers in Kaqchikel are written as subparts of a complex word in verbal contexts (40a–b), but as independent words in nonverbal predicate constructions (40c). While this convention does reflect the grammatical organization of Kaqchikel—in particular, the prosodic variability of ABS markers, which we return to in section 3.2—it masks the fact that ABS behaves as a dependent morpheme even when occurring with nonverbal predicates (NVPs).[24] The ABS markers fail a number of standard tests for independent wordhood in NVP contexts. First, ABS is always predicate-adjacent (García Matzar, Toj Cotzajay, and Coc Tuiz 1999:289): it cannot be separated from the NVP by other content words (see (42)–(45)) or by functional items like particles (see (46)).

(42) a. wakamin e   tijonel-a'
          now   3PL.ABS teacher-PL
          'Now they are teachers.'
      b. *e wakamin tijonel-a'

(43) a. jantape öj   ch'ayonel
          always 1PL.ABS fighter
          'We're always quarrelsome.'
      b. *öj jantape ch'ayonel

(44) a. jun b'e chik ïx   nüm
          one time more 2PL.ABS hungry
          'They're hungry again.'
      b. *ïx jun b'e chik nüm

(45) a. yalan in   jwi'
          very 1SG.ABS smart
          'I'm very smart.'
      b. *in yalan jwi'

(46) a. e   aq'omanel-a' k'a
          3PL.ABS doctor-PL   then
          'They're doctors, then.'
      b. *e k'a aq'omanel-a'

The inseparability of ABS from its NVP host holds even in the case of clitic interveners that can normally interrupt syntactic constituents. The negative/irrealis clitic *ta* freely intervenes between function words and their complements. This is illustrated for the focus marker *ja* in (47) (see Patal Majzul, García Matzar, and Espantzay Serech 2000:145–149 for Kaqchikel, Henderson

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[24] As noted in section 1, the term *dependent morpheme* subsumes both morphosyntactic affixes and morphosyntactic clitics (as opposed to roots and other free elements). We address the clitic vs. affix status of Kaqchikel ABS markers below.

2012 and Yasavul 2014 for K'iche'). But the same clitic *ta* cannot separate ABS from its host in NVP constructions (48).

(47) a. ja   ixim nintij
        FOC corn I.eat.it
        'It's CORN that I'm eating.'
     b. man ja   ta   ixim nintij
        NEG FOC NEG.IRR corn I.eat.it
        'It's not CORN that I'm eating.'

(48) a. man at   tz'uyül ta
        NEG 2SG.ABS seated NEG.IRR
        'You're not sitting.'
     b. *man at   ta   tz'uyül
        NEG 2SG.ABS NEG.IRR seated
        'You're not sitting./It's not you who's sitting.'

Second, ABS markers cannot appear in isolation—they are not free forms. One could not respond to the question *Achike aq'omanel?* 'Who is a doctor?' with the 1SG.ABS marker *in* 'me' (the freestanding pronoun *rïn~yïn* would be used instead). Third, ABS markers cannot be coordinated.

(49) in   (*chuqa' at)   aq'omanel-a'
     ABS.1SG (and   2SG.ABS) doctor-PL
     Intended: 'You and I are doctors.'

These properties distinguish ABS markers from true pronouns, which can cooccur with ABS marking (50) and which have a more flexible distribution than ABS agreement (51), as they may be separated from their associated predicates by intervening adverbials and particles. A true pronoun may also appear as the object of a preposition, while an ABS marker may not (52).

(50) a. rat at   aj=kematz'ib'
        you 2SG.ABS AGT=computer
        'You are a computer programmer.'
     b. röj öj   q'ojomanel-a'
        we 1PL.ABS musician-PL
        'We are musicians.'

(51) a. rïx (ojer)   ïx   tijoxel-a
        they (before) 2PL.ABS student-PL
        'They are (used to be) students.'
     b. röj k'a öj   q'ojomanel-a'
        we then 1PL.ABS musician-PL
        'We are musicians, then.'
     c. man röj ta   öj   na'ojinel-a'
        NEG we NEG.IRR 1PL.ABS politician-PL
        'We're not politicians./It's not us who are politicians.'

(52) a. matyöx chiwe' rïx
     thanks to   2PL.ABS
     'Thanks y'all.'

    b. *matyöx chiwe' ïx
     thanks to   2PL.ABS
     'Thanks y'all.'

The same diagnostics identify both ABS and ERG as dependent morphemes in inflected verbs (53). Here, we show only that particles like *k'a* 'then' cannot separate ABS and ERG from their hosts in verbal contexts.

(53) a. x-at-in-tz'ët
     CPL-2SG.ABS-1SG.ERG-see
     'I saw you.'

    b. *x-a(t)-k'a-in-tz'ët
     CPL-2SG.ABS-then-1SG.ERG-see
     Intended: 'I saw you, then.'

    c. *x-at-in-k'a-tz'ët

We conclude that the ABS and ERG markers in Kaqchikel are dependent morphemes in all contexts in which they appear. Indeed, we can draw the stronger conclusion that these agreement markers are morphosyntactically affixes rather than clitics. By *morphosyntactic clitic*, we mean a morpheme that (a) is phonologically weak, (b) cannot appear in isolation, and (c) has some syntactic independence from its phonological host (e.g., it does not form a complex morphosyntactic head with it, as diagnosed by variable positioning, separability from its host, and other standard criteria for distinguishing affixes from clitics; e.g., Zwicky and Pullum 1983). The fact that ABS and ERG markers are inseparable from their hosts strongly suggests that they are affixal in nature.[25]

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[25] It has sometimes been suggested that ABS is a morphosyntactic clitic—specifically, a kind of reduced or incorporated pronoun—in verbal contexts in K'ichean languages (e.g., Preminger 2014). We stress two things here. First, there is no direct relation between morphosyntactic clitichood and prosodic clitichood, apart from the observation that morphosyntactic clitics are normally less than full prosodic words (Anderson 2005 and section 3.3). Second, this characterization of the ABS markers appears to be more appropriate for non-K'ichean languages like Q'anjob'al than for languages of the K'ichean branch.

    Diachronically, the evidence is strong that ABS was a morphosyntactic clitic in proto-Mayan (see Robertson 1992:53, Law 2014:179). The synchronic evidence for this claim is much weaker in K'ichean languages, and hinges primarily on the observation that movement-indicating morphemes like *b'e* 'go' can intervene between ABS and ERG in verbs (Patal Majzul, García Matzar, and Espantzay Serech 2000:130; see also Larsen 1988:153–161, 180–184). (The [ʔ] in (i) occurs to resolve hiatus.)

(i) y-e-b'e-'-in-tz'et-a'
    INCPL-3PL.ABS-go-[ʔ]-1SG.ERG-see-TRANS
    'I go to see them.'

Were these movement morphemes themselves morphosyntactic clitics, one might plausibly conclude that ABS markers are morphosyntactic clitics too, following the standard diagnostic that only clitics can attach outside other clitics (e.g., Zwicky and Pullum 1983, Van Riemsdijk 1990). But the evidence for a clitic treatment of movement morphemes is itself quite weak: the same facts seem amenable to an analysis in terms of templatic affix ordering (e.g., Aronoff and Xu 2010, Ryan 2010, and references there). See Heaton 2016 for detailed discussion of the synchronic patterning of movement affixes in Kaqchikel.

Since the ABS markers are also formally identical in all of their contexts of use (apart from phonologically conditioned allomorphy; see table 2 and section 3.2.1), we draw the further conclusion that ABS markers constitute a single set of morphemes that happen to be used in both verbal and nonverbal contexts. There is no reason to assume a lexical difference between the ABS markers used with verbs and those used with nonverbal predicates.[26]

3.2 The Prosodic Variability of ABS

Having concluded that the ABS markers are a unified morphological class across verbal and nonverbal contexts, in this section we argue that the prosody of ABS marking is in fact heterogeneous in Kaqchikel. Absolute agreement markers behave as external clitics in NVP structures (where there is no aspect marking) and as internal clitics in verbs (when aspect marking is present).[27] In section 3.2.1, we provide phonological and morphophonological evidence for this conclusion, and in section 3.2.2, we provide supporting data from subsegmental phonetic patterning. In section 3.3, we argue that the prosodic variability of ABS reflects prosodic smothering by higher aspect prefixes, and we argue against alternative syntactic accounts of this prosodic difference.

3.2.1 Phonological Evidence for Variable ABS Prosody

There are two pieces of phonological evidence that the ABS agreement markers have a context-dependent prosodic realization in Kaqchikel. The first comes from the differential behavior of [ʔ]-insertion. Words that begin with an underlying vowel typically bear an epenthetic glottal stop on the surface (54) (García Matzar, Toj Cotzajay, and Coc Tuiz 1999:12, Barrett 2007, Bennett 2016; for the sake of readability, we omit the initial [ʔ] from our examples except when relevant for the argumentation).

(54) a. jun [ʔ]oj
         one avocado
         'an avocado'
      b. lajuj [ʔ]äk'
         ten   chicken
         'ten chickens'
         (Patal Majzul 2007:93, 295)

Prefixation bleeds [ʔ]-insertion, provided that the prefixes are internal clitics. We illustrate this with ERG possessive prefixes (55)–(56), as well as with the completive aspect marker *x-* (56)–(57).

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[26] The same conclusions hold for the ERG markers in Kaqchikel, with one caveat: the ERG.1SG marker is *in(w)-* with verbs, but *nu-/w-* with nouns. See Kenstowicz 2013 for an attempt to reduce this difference to separate morphophonological factors.

[27] The terms *internal clitic* and *external clitic* are somewhat misleading here, inasmuch as absolutive marking in Kaqchikel is a morphosyntactic affix rather than a morphosyntactic clitic or independent word (section 3.1; see Selkirk 1995:188). We nonetheless retain this terminology to emphasize that the prosodic structures we propose for Kaqchikel are exactly parallel to the prosodic structures proposed earlier for Macedonian (section 2.4).

(55) a. [ʔ]ik' 'month'
      b. aw-ik'/*a(w)-[ʔ]ik'
          2SG.ERG-month
          'your month/period'

(56) a. /-el/ 'to leave'
      b. [ʔ]el-e-b'äl
          leave-V-LOC
          'exit'
      c. w-el-e-b'al
          1SG.ERG-leave-V-LOC
          'my exit'
      d. *w-[ʔ]el-e-b'al, *nu-[ʔ]el-e-b'al

(57) x-el / *x-[ʔ]el
      CPL-leave.3SG.ABS
      'She/He left.'
      (Patal Majzul 2007:166–167)

In contrast, morphological prefixes that are external clitics do not bleed [ʔ]-insertion (58), being parsed outside of the minimal ω containing the stem.

(58) a. aj=[ʔ]ik'/*aj=ik'
          AGT=month
          'domestic worker (lit. monthly worker)'
      b. ach=[ʔ]ali'/*ach=ali'
          COM=daughter.in.law
          'co-parents-in-law (Spanish *consuegros*)'
          (Patal Majzul 2007:59, 67, 82)

For similar observations in K'iche' and Tz'utujil, two closely related Mayan languages, see Dayley 1981:22–23, 245–246 and Larsen 1988:54, 130–132.

Turning to the ABS markers, we see that [ʔ]-epenthesis is blocked by the affixation of ABS when functioning as verbal agreement (59)–(60). This fact is consistent with treating ABS as an internal clitic in this context.

(59) a. y-at-el
          INCPL-2SG.ABS-leave
          'You leave.'
      b. *y-a(t)-[ʔ]el
      c. y-in-apon
          INCPL-1SG.ABS-arrive
          'I arrive.'
      d. *y-i(n)-[ʔ]apon

However, in NVP constructions the ABS markers cooccur with an epenthetic glottal stop (60)–(61). This is to be expected if ABS is an external clitic in this context.

(60) a.   at   [ʔ]oj
          2SG.ABS avocado
          'You are an avocado.'
     b. *at oj
     c.   in   [ʔ]umül
          1SG.ABS rabbit
          'I am a rabbit.'
     d. *in umül

Patterns of [ʔ]-insertion thus indicate that ABS has a dual prosodic status in Kaqchikel: it is an internal clitic in verbal contexts, and an external clitic when occurring with nonverbal predicates (see Dayley 1981:84, 195 for a similar, albeit less concrete suggestion for Tz'utujil).

Additional support for this conclusion comes from patterns of phonologically conditioned allomorphy. In Mayan languages, ERG markers typically come in two sets: a prevocalic form and a preconsonantal form (Kaufman 1990). Kaqchikel has extended these alternations to the ABS markers (table 2).[28] The prevocalic forms are C-final (61); the preconsonantal forms, V-final (62). This is a morphophonological innovation that has not been reported for other languages in the K'ichean branch. Selection of the prevocalic allomorph bleeds [ʔ]-insertion (59) (García Matzar, Toj Cotzajay, and Coc Tuiz 1999:178, Patal Majzul 2007:32, 40).

(61) *Prevocalic ABS markers*
     a.   x-**in**-oq
          CPL-**1SG.ABS**-cry
          'I cried.'
     b.   x-**at**-in-tzu'
          CPL-**2SG.ABS**-1SG.ERG-see
          'I saw you.'

(62) *Preconsonantal ABS markers*
     a.   x-**i**-b'e
          CPL-**1SG.ABS**-go
          'I went.'
     b.   x-**a**-ru-tzu'
          INCPL-**2SG.ABS**-3SG.ERG-see
          'She/He saw you.'

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[28] García Matzar, Toj Cotzajay, and Coc Tuiz (1999:178) report that this innovation is found in the dialects of Tecpan (Iximche') and Semetab'äj, though two of the present authors (Bennett and Henderson) have encountered these patterns more widely across dialects of Eastern Kaqchikel.

That these alternations represent suppletive allomorphy rather than a purely phonological alternation is clear from the following facts: (a) not all ABS markers show the alternations in question (e.g., 1PL.ABS *öj* is invariant); (b) allomorphy avoids clusters that are otherwise attested in Kaqchikel (e.g., *y-i-b'e*/**y-in-b'e* 'I go' vs. *n-in-b'ij* 'I say it'); and (c) the alternating consonants are not phonologically predictable and so cannot represent consonant insertion motivated by hiatus avoidance (the normal strategy for avoiding hiatus in Kaqchikel is [ʔ]-insertion; García Matzar, Toj Cotzajay, and Coc Tuiz 1999:32).

Importantly, these alternations only occur for ABS in its function as a marker of verbal agreement. In nonverbal predicates, the prevocalic (consonant-final) ABS allomorphs are used, regardless of the initial segment of the NVP host (63)–(64).

(63) a. at   aj=yoq'
       2SG.ABS AGT=to.shepherd
       'You are a pastor.'

    b. at/*a   r-achib'il
       2SG.ABS 3SG.ERG-friend
       'You are his/her friend.'

(64) a. in   aj=k'ay
       1SG.ABS AGT=sell
       'I am a merchant.'

    b. in/*i   b'ix-an-el
       1SG.ABS sing-ANTIP-NMLZ
       'I am a singer.'

We suggest that the ABS markers are too prosodically ''distant'' from their hosts in NVP constructions for the segmental phonology of those hosts to condition allomorphy of ABS (see also Zwicky and Pullum 1983, Nespor and Vogel 1986, Hayes 1990, Mascaró 1996, 2007, Van Riemsdijk 1990, Nevins 2011a,b, Wagner 2011, 2012, Varis 2012; see Henderson 2012 for related facts in K'iche'). Absolutive allomorphy in Kaqchikel can therefore be meaningfully unified with the [ʔ]-insertion patterns in (54)–(60) if we assume that the prosodic boundary between ABS and its host is stronger in NVP constructions than in fully inflected verbs.

3.2.2 Phonetic Evidence for Variable ABS   Confirmatory evidence for the prosodic variability of ABS marking in Kaqchikel comes from subsegmental phonetic patterning. Derived (or ''false'') geminates are significantly longer across the boundary between ABS and an NVP than across the boundary between ABS and a verbal stem. This contrast is consistent with the presence of a stronger post-ABS prosodic boundary in NVP constructions than in verbal forms.

Like all Mayan languages, Kaqchikel has no phonemic geminates: underlying geminates only occur as the result of morphological or syntactic concatenation (65)–(66). (See, for example, Herrera Zendejas 2014:chaps. 9, 10 for similar patterns in other Mayan languages.)

(65) a. ö**j j**ot-öl
       1PL.ABS elevate-POSIT
       'We are elevated.'

    b. x-o**j**-**j**ot-e'
       CPL-1PL.ABS-elevate-INTRANS
       'We climbed.'

(66) x-in-ti**j** **j**un pï**x** **x**är
     CPL-1SG.ERG-eat one tomato blue
     'I ate a blue tomato.'

These geminates are ''false'' in the sense that they represent a sequence of identical consonants rather than a unitary long consonant (e.g., McCarthy 1986, Blevins 2004).

It is well-known that derived geminates may differ in duration from singleton consonants and that this durational difference may be sensitive to the strength of the boundary between the two identical consonants. In English, for example, the word *innumerable* has a shorter doubled *nn* [n] than a phrase like *in Nevada* [nn] or a compound like *tin nickels* [nn] (e.g., Inkelas 1990:97, Hammond 1999, Martin 2007, Oh and Redford 2012). Here, duration correlates with boundary strength: derived geminates are longer across stronger boundaries.

In a production study with Kaqchikel speakers, we investigated whether these results would extend to the ABS markers. We expected that derived geminates should be phonetically longer across ABS-NVP boundaries (65a) than across ABS-VERB boundaries (65b), given the phonological evidence for a stronger boundary in ABS-NVP constructions (section 3.2.1). Two of the authors (Bennett and Henderson) recorded six Kaqchikel speakers in Chimaltenango, Guatemala, to test this claim. The speakers were presented with a written list of phrases in Spanish, composed of copular constructions corresponding to NVP constructions in Kaqchikel (65a) (e.g., Spanish *Soy grande* → Kaqchikel *in nim* 'I am large') as well as noncopular verb phrases corresponding to inflected verbs in Kaqchikel (65b) (e.g., Spanish *Ustedes se sentaron* → Kaqchikel *xixtz'uye'* 'Y'all were sitting down'). Participants were asked to translate the Spanish phrase to Kaqchikel, then produce it twice in the carrier phrase (67).

(67) María x-∅-u-b'ij   ____ pa b'ey.
     María CPL-3SG.ABS-3SG.ERG-say   in the.street
     'María said ____ in the street.'

The materials were presented in Spanish rather than in Kaqchikel to avoid an orthographic confound: the ABS markers are written as separate words in NVP constructions, which might prime participants to produce NVPs with a stronger prosodic boundary. Most Kaqchikel speakers are also more comfortable reading Spanish than Kaqchikel.

The target items were NVP constructions or intransitive verbs like (65a–b). In both cases, the ABS marker is in immediately pre-predicate position. We focused on the ABS markers *öj* 1PL.ABS and *ix* 2PL.ABS, as these are the only two phonologically invariant ABS markers (other ABS markers have patterns of allomorphy that make it impossible to create derived geminates; section 3.2.1). Our dependent measure was the duration of the ABS-final consonants, these being *j* [χ] and *x* [ʃ]. The two ABS markers *öj* and *ix* were paired with hosts beginning in *j* [χ] and *x* [ʃ] to test the durations of derived geminates (68a–b). These items were compared with singleton *j* [χ] and *x* [ʃ] in nongeminate clusters (68c–d).

(68) a. Geminate [C-C] in a verb: *x-**ix-x**ik'an* 'Y'all flew.'

      b. Geminate [C=C] in an NVP: *ïx xar* 'Y'all are blue.'

      c. Singleton [C] in a verb: *x-**ix**-katäj* 'Y'all got up.'

      d. Singleton [C] in an NVP: *ïx nïm* 'Y'all are large.'

These items were combined with filler forms containing other ABS markers (e.g., *in kow* [in kow̥] 'I am tough') or ERG markers (e.g., *xinjäl* [ʃ-**in**-χəl] 'I changed it'), as well as some bare roots (e.g., *b'aq* [ɓaqʰ] 'bone'). This gave a total of 40 experimental items.

    All recordings were made using a head-mounted microphone, at a sampling rate of 44.1 kHz. We measured the duration of the fricatives *j* [χ] and *x* [ʃ] in each target item by marking the beginning and end of aperiodic noise in the waveform corresponding to the ABS-final consonant (e.g., Turk, Nakai, and Sugahara 2006). Productions with obvious disfluencies in the target item were excluded from analysis. All measurements were done in Praat (Boersma and Weenink 2010), and the statistical analysis was completed in R (R Development Core Team 2013) using the lmer and ggplot2 packages (Bates, Maechler, and Bolker 2011, Wickham 2009).

    The results are presented graphically in figure 1. Our measurements display exactly the predicted pattern of fricative duration. The duration of the singleton fricatives *j x* [χ ʃ] is about the same in both verbal and NVP contexts, but the duration of derived geminates varies with morphosyntactic context.

    Partial degemination of the ABS-final consonant occurs with intransitive verbs: derived geminates are somewhat longer than singletons, but not as long as truly doubled consonants (Δ: *x* [ʃ] = 69 ms, *j* [χ] = 52 ms; Ratio: *x* [ʃ] = 1.57, *j* [χ] = 1.46). With NVP constructions, the durational difference between false geminates and singletons is much larger (Δ: *x* [ʃ] = 97 ms, *j* [χ] = 143 ms; Ratio: *x* [ʃ] = 1.67, *j* [χ] = 2.28), indicating a lesser degree of degemination in this environment. This is as expected if the prosodic boundary between ABS and an NVP host is stronger than that between ABS and a following verbal stem. This contextual difference emerges as strongly significant in a linear mixed-effects model (the Predicate Type × C Length interaction in table 3 on page 229; Pinheiro and Bates 2000, Gelman and Hill 2006): derived geminates are roughly 73 ms shorter when the host is a verb rather than a nonverbal predicate.[29]

    As already suggested, these patterns of subphonemic variation can be easily explained if there is a relatively strong prosodic boundary between the ABS marker and its predicate host in nonverbal predicate constructions. This boundary must be absent, or at least weaker, between ABS markers and intransitive verbal stems. These findings dovetail with the phonological and morphophonological evidence for a distinction in the strength of the post-ABS boundary across NVP and verbal contexts (section 3.2.1).

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[29] The linear mixed-effects model in table 3 was determined by a step-down model selection procedure using the log-likelihood and AIC tests to compare nested models. The initial full model had fixed effects for Consonant Length (/C_k/ vs. /C_kC_k/), Predicate Type, Place of Articulation, the stress profile of the initial syllable of the host (Stress), and syllable count of the host (Host Length). A fixed effect for the C Length × Predicate Type interaction was also included. The model also includes by-speaker random slopes for C Length, Predicate Type, Place of Articulation, Stress, and C Length × Predicate Type, as well as simple random effects for speaker and item (see Baayen, Davidson, and Bates 2008, Barr et al. 2013).
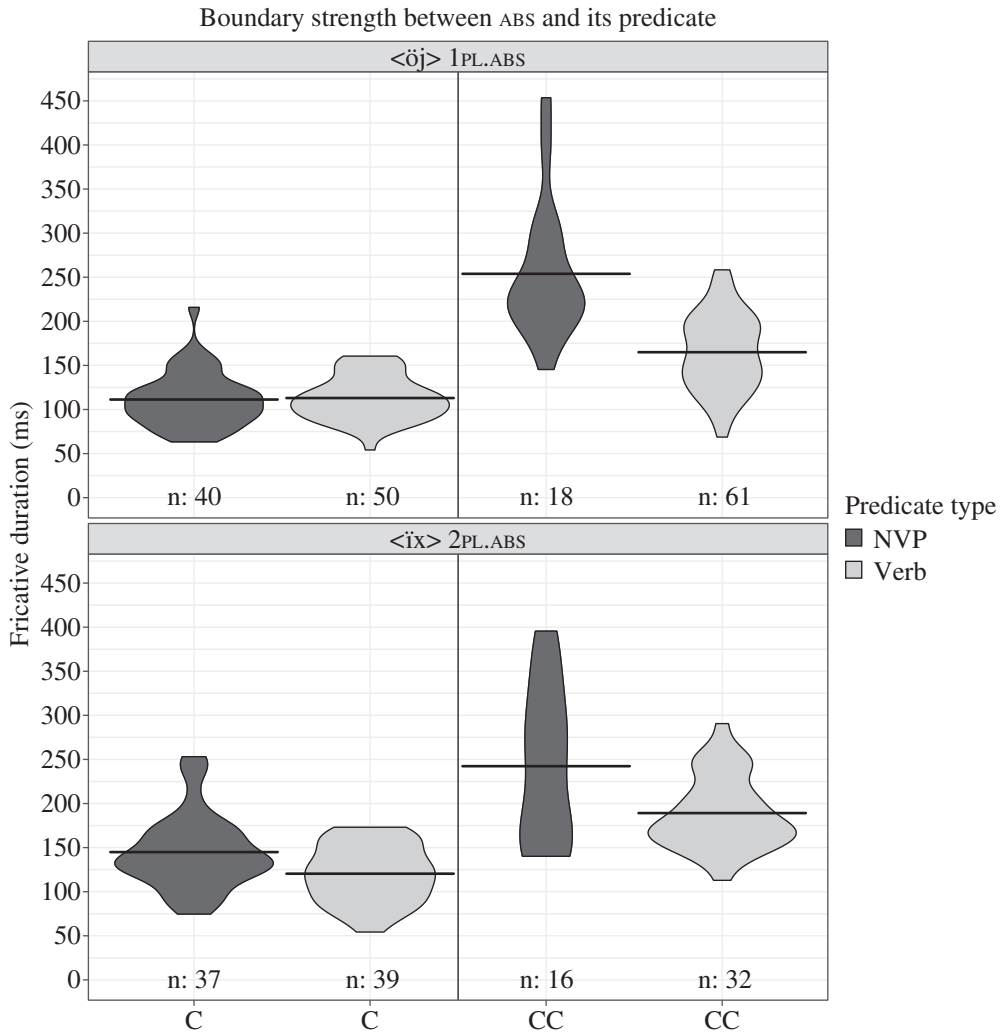
Figure 1
Duration of the fricatives in *öj* /ɔχ-/ 1PL.ABS and *ïx* /ɪʃ-/ 2PL.ABS by context. (NVP = nonverbal predicate)

We conclude that the prosody of ABS is indeed variable and context-dependent in Kaqchikel. The puzzle then is why such variation exists, given that the ABS markers represent a single set of lexical items realized as dependent morphemes in both NVP and verbal constructions. In the following section, we argue that this variation can be reduced to prosodic smothering: the presence or absence of an outer aspect marker conditions the prosody of inner absolutive agreement, for reasons related to the prosodic subcategorization requirements of aspect.

Table 3
Final fricative duration model. Coefficients express predicted increase in duration.

	Estimated β (ms)	SE(β)	t	p-value
(Intercept)	−59	11.2	−5.30	< .001
C Length ($/C_k/$ vs. $/C_kC_k/$)	127	17.4	7.29	< .001
Predicate Type × C Length (verb × $/C_kC_k/$)	**−73**	**14.0**	**−5.22**	**< .001**
Place of articulation (x [ʃ])	23	8.4	2.80	< .006
Stress (ABS + ɕ́)	25	9.2	2.70	< .008
Predicate Type (verb)	13	10.3	1.30	< .20

3.3 Analysis: Vertical Subcategorization

3.3.1 Optimality Theory Formalization   In section 2, we demonstrated that variation in the prosodic parsing of Macedonian object clitics can receive a straightforward account in terms of prosodic smothering, formalized with prosodic subcategorization frames that make direct reference to dominating categories. The goal of this section is to show that prosodic smothering in Kaqchikel absolutive marking is amenable to the same type of analysis. This suffices to establish prosodic smothering as a typologically recurrent pattern. Moreover, the fact that a unified analysis is available for these two phenomena, which come from unrelated languages and which recruit completely different phonological processes, provides further support for the use of vertical subcategorization frames in the analysis of prosodic smothering.

Like the functional elements of the Macedonian clausal spine, verbal inflection in Kaqchikel can be split into those dependent morphemes that must be dominated by a minimal prosodic word and those that are by default parsed outside of the minimal ω containing the verb. We propose that aspect marking in Kaqchikel, like *ne* and *wh*-clitics in Macedonian, has a prosodic subcategorization frame (69) that requires immediate domination by a minimal prosodic word—aspect prefixes are internal clitics. Example (70) shows the behavior of aspect under such a parse in a clause with no overt person marking. That aspect belongs to the same minimal prosodic word as the verb stem can be diagnosed by the failure of [ʔ]-insertion in examples like *x-el* 'She/He left' (57).[30]

(69) $[_{\omega\text{-MIN}}$ ASP $[\ldots]]$

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[30] While we have not directly investigated degemination with verbal aspect prefixes, impressionistically, forms like *xxajo'* /ʃ-ʃaχoʔ/ 'she/he danced' and *nniman* /n-niman/ 'she/he believes' are pronounced with singleton consonants, [ʃa.ˈχoʔ] and [ni.ˈman], as our account predicts (examples from Patal Majzul 2007:290, 534).

(70) [$_{\omega\text{-MIN}}$ **x-**   wär]
        CPL sleep
    'He/She/It slept.'

While Kaqchikel aspect markers subcategorize for domination by a minimal prosodic word, we assume that ABS markers are external clitics by default, parsed outside of the ω-MIN containing their host. This is illustrated for a nonverbal predicate construction in (71).

(71) in=   [$_{\omega\text{-MIN}}$ nïm]
    1SG.ABS   large
    'I'm large.'

When ASP and ABS cooccur in verbal contexts, a conflict results: it is not possible to assign ABS its default parse as an external clitic while also incorporating aspect into a minimal prosodic word containing its host. This is illustrated in (72). Here, we see that ASP appears to the left of ABS, with the consequence that satisfying the default prosody of ABS would strand ASP outside the ω-MIN of the verb, in violation of the vertical subcategorization frame (69).

(72) a. *x- in=   [$_{\omega\text{-MIN}}$ wär]
        CPL 1SG.ABS   sleep
        'I slept.'
    b. *ASP-ABS=[$_{\omega\text{-MIN}}$ VERB]

If this conflict is resolved in favor of the prosodic subcategorization of the outer morpheme ASP, the result is prosodic smothering, exactly as in Macedonian. Example (73) illustrates that when ASP is parsed inside the minimal prosodic word, so is the ABS marker, contra its default behavior as an external clitic (cf. (71)).

(73) a. [$_{\omega\text{-MIN}}$ x-   i-   wär]
            CPL 1SG.ABS sleep
        'I slept.'
    b. [$_{\omega\text{-MIN}}$ ASP-ABS-VERB]

The prosodic variability of Kaqchikel ABS markers, then, is completely akin to the patterning of Macedonian object clitics. In both cases, vertical subcategorization frames take precedence over default parsing (74) and thereby force prosodic smothering (75). And just as in Macedonian, standard syntax-prosody mapping constraints are responsible for ruling out alternative repairs to the prosodic dilemma in (72)–(73).

(74)

[VP in- wär]	Subcat(Asp)	Al-R(ω, Lex)	Al-L(Lex, ω)
a. ☞ {φ in= [ω-MIN wär]}			
b. ☞ [ω-NONMIN in= [ω-MIN wär]]			
c. [ω-MIN in- wär]			*! W
d. [ω-MIN in] [ω-MIN wär]		*! W	

(75)

[AspP x- [VP in- wär]]	Subcat(Asp)	Al-R(ω, Lex)	Al-L(Lex, ω)
a. ☞ [ω-MIN x- in- wär]			*
b. {φ x- in= [ω-MIN wär]}	*! W		L
c. [ω-NONMIN x- in= [ω-MIN wär]]	*! W		L
d. [ω-MIN x- in] [ω-MIN wär]		*! W	L

3.3.2 Against a Syntactic Analysis of the Prosodic Variability of ABS   As with Macedonian (section 2.5.2), we now address a competing syntactic analysis of ABS marking in Kaqchikel in which the variable prosody of the ABS markers owes to an underlying syntactic difference between verbal and NVP constructions. One might reasonably assume that ABS is part of a complex syntactic head in verbal contexts (76), but part of a head-complement structure in nonverbal predicates (77). As with our proposal, the presence or absence of higher aspect marking might be the determining factor behind this difference: predicates raise to ASP when ASP is present in the structure (or at least phonologically overt) (76), but otherwise remain in situ.

(76) *ABS as a complex head in verbal* xatinwoyoj *'I called you (CPL-3SG.ABS-1SG.ERG-call)'*

AspP

Asp⁰ — x-**at**-inw-oyoj

TP

T⁰ — t_{ABS}

vP

v⁰ — t_{ERG}

VP

V⁰ — t_i
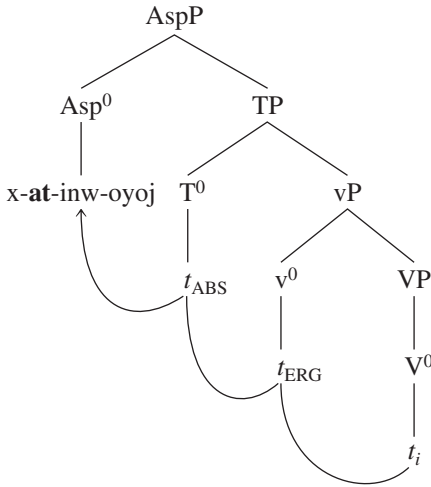
(77) *ABS in a head-complement structure in nonverbal* at tijonel *'You are a teacher (2SG.ABS teacher)'*

AspP

Asp⁰ — Ø

TP

T⁰ — **at**=

PredP

Pred⁰

NP

N⁰

tijonel
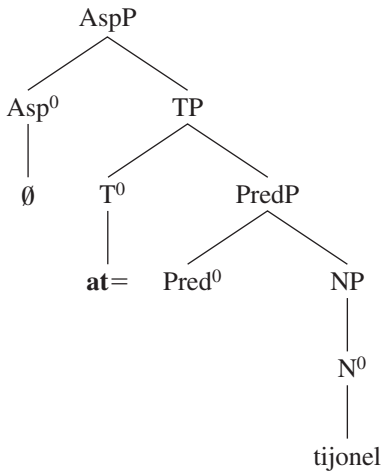
For proposals along these lines, see Baker 2003, Mateo Toledo 2008, and Coon, Mateo Pedro, and Preminger 2014, among others. Now assume with Selkirk (2011) and others that the default mapping from syntax to prosody parses complex heads (76) into single prosodic words ω, while parsing head-complement structures (77) into multiple prosodic words. Such a mapping algorithm would derive the observed prosodic variation in ABS marking from the hypothesized syntactic structures (76)–(77) without any special stipulations about the morphology or prosody of ABS or ASP. We stress that very few of the syntactic particulars matter here: the argument hinges only on the structural distinction between complex heads and head-complement structures, along with

a syntax-prosody mapping algorithm that treats such structures differently. The central premise of this analysis is that syntactic integration necessarily entails prosodic integration.

We suspect that something like the syntax sketched in (76)–(77) is correct for predicative structures in Kaqchikel. But whatever the syntax of predication may be in Kaqchikel, we believe that the analysis just sketched is deficient in several important respects. Perhaps most problematic is the assumption of a transparent mapping between syntactic and prosodic structure. While the correlation between syntactic headedness and prosodic wordhood is no doubt a robust tendency, there is strong evidence for a double dissociation of this apparent correspondence (a conclusion reached independently by Harley (2013), Green and Morrison (2015), and Barrie and Mathieu (2016), among others).

First, both within and outside of Kaqchikel we find complex syntactic heads that do not map to unitary prosodic words (see also Inkelas 1990, Poser 1990, Peperkamp 1997). We have already encountered one such example: agentive nominals formed with the prefix *aj-* in Kaqchikel behave phonologically like clitic=host structures rather than simple prosodic words (58). Morphosyntactic diagnostics clearly indicate that agentive nouns like *ajq'ij* 'shaman' are prefixed stems, that is, internally complex morphosyntactic words (e.g., Zwicky 1977, Zwicky and Pullum 1983, Van Riemsdijk 1990, Anderson 2005, Nevins 2011a). For instance, affixal inflectional morphology may appear outside of *aj-*, suggesting that this morpheme is also a morphosyntactic affix rather than a morphosyntactic clitic (under the widespread assumption that affixes cannot attach to hosts already containing clitics; Zwicky and Pullum 1983). In (78), we see that *aj-* forms stems that can be further inflected with ergative possessor agreement.[31]

(78) a. r-aj=to'-öl
     3SG.ERG-AGT=help-NMLZ
     'his/her helper'
   b. r-aj=t'is
     3SG.ERG-AGT=sew
     'his/her tailor'
     (Patal Majzul 2007:75)

A second test concerns the behavior of *aj-* with bound stems. As the examples in (79) and (80) show, *aj-* patterns with unambiguous morphosyntactic affixes in satisfying the morphological requirements of these stems, which may not occur unaffixed (Cojtí Macario, Chacach Cutzal, and Calí Semeyá 1998, Patal Majzul 2007).

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[31] One might expect to find prosodic smothering in forms like (78) when *aj-* is attached to a vowel-initial stem and then possessed: for example, *aj'ik'* [ʔaχ=ʔikʔ] 'domestic worker' ∼ *rajik* [r-aχ-ikʔ] (*aj-* smothered). We do not know what the facts are here, but either outcome would be consistent with our proposals. Either possessive inflection smothers *aj-*, in which case we must assume that the ergative prefixes in Kaqchikel have a subcategorization frame like that of ASP (69), or smothering fails to occur, in which case we can assume that the ergative prefixes have no particular prosodic requirements of their own. We thank Heidi Harley for bringing examples like these to our attention.

(79) a. -xikin 'ear'
     b. aj=xikin 'listener'
     c. nu-xikin 'my ear'
     d. *-xikin '(an) ear'
     e. cf. xikin-aj '(an) ear'

(80) a. -chi' 'mouth'
     b. aj=chi 'chatty person'
     c. nu-chi 'my mouth'
     d. *-chi '(a) mouth'
     e. cf. chi-'aj '(a) mouth'

Finally, while *aj-* usually has transparent agentive semantics, it is only semicompositional in some forms, indicating the higher degree of lexicalization that is characteristic of affixes (e.g., Zwicky and Pullum 1983, Inkelas 1990). For instance, the nominal derived by combining *aj-* with *potz'* 'police' is not agentive, but a derisive form of the noun. This again points toward the conclusion that *aj-* is a word-level prefix rather than a morphosyntactic clitic or independent function word.

(81) a. potz' 'police'
     b. ajpotz' 'police (derisive)'
     c. chij 'wool; sheep; candle'
     d. ajchij 'annoying person'
     e. iq' 'ceramic container'
     f. aj'iq' 'person with a sweet tooth'
     g. ch'ak 'meat, flesh'
     h. ajch'ak 'hawk; carnivore'
          (Cojtí Macario, Chacach Cutzal, and Calí Semeyá 1998, Patal Majzul 2007)

All such tests confirm that *aj-* is a morphosyntactic prefix in Kaqchikel, forming a complex head with its host. But as demonstrated earlier, *aj-* has the phonological behavior of an external clitic. First, it fails to bleed word-initial [ʔ]-insertion on its stem (82) (see also Bennett 2016).[32]

(82) aj=[ʔ]eyaj/*aj=eyaj'
     AGT=tooth
     'dentist'
     (Patal Majzul 2007:67)

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[32] Kaufman (2015) analyzes *aj-* as a root rather than a prefix. We believe that the synchronic evidence for treating *aj-* as a root is limited, at least for Kaqchikel. Regardless, treating *aj-* as a root would not explain its behavior with respect to [ʔ]-insertion, as [ʔ]-insertion does not normally occur in root-root compounds with a vowel-initial second member (e.g., *kajulew* [kaχ-uleẉ] 'universe' (lit. 'sky-earth'), not *[kaχ-ʔuleẉ]; Brown, Maxwell, and Little 2010:152–154).

Furthermore, *aj-* does not trigger degemination when attaching to a stem that also begins with *j* [χ].

(83) a. aj=juku'   [ʔaχ=χukuʔ]
      AGT=boat
      'boatman'

    b. aj=jach'öl   [ʔaχ=χat͡ʃʼɔl̥]
      AGT=shuck
      'corn-shucker'
      (Patal Majzul 2007:69)

The primary conclusion from these data is that morphosyntactic wordhood does not itself guarantee phonological wordhood. The tendency for correspondence between these notions of ''word'' can be disrupted by arbitrary and idiosyncratic properties of individual morphemes. Crucially, this conclusion interferes with the core assumption necessary for a syntactic explanation of the prosodic alternations of Kaqchikel ABS markers, namely, that internal clitics, and only internal clitics, belong to complex syntactic heads.

It is even more straightforward to show that distinct syntactic heads may (and frequently do) form a single prosodic word with their complements, despite being syntactically independent objects. This is especially true of functional elements. One such example comes from prepositional phrases in Western Macedonian: prepositions are proclitic to their complements, and together form a single stress domain (ω-MIN): for example, [$_{\omega\text{-MIN}}$ PRED vas] 'before you' (Tomić 2012:63). See Selkirk 1995, Zec 2005, and references there for related discussion. This completes the double dissociation between syntactic unity and prosodic unity that the syntactic alternative relies on.

The goal of this section has been to defuse a potential syntactic analysis of the variable prosody of ABS marking in Kaqchikel. Crucially, such an analysis presupposes a tight mapping between syntax and prosody. We have shown that this critical assumption is flawed. The data instead support a fundamental assumption of our own proposals: idiosyncratic, lexically specific constraints on prosodic phrasing can disrupt more general patterns of syntax-prosody correspondence. We contend that in Kaqchikel, as in Macedonian, these lexically specific constraints should be understood as subcategorization requirements operating over the vertical dimension.

4 Discussion

Drawing on data from Macedonian and Kaqchikel, we have argued that prosodic smothering is a general phenomenon that may occur whenever item-specific prosodic requirements take precedence over default patterns of prosodic parsing. The typical configuration for prosodic smothering is [X [Y Z]], where X triggers a nondefault prosodic parse for Y: [$_\delta$ Y ($_\pi$ Z)] but [$_\delta$ X ($_\pi$ Y Z)]. This characterization of prosodic smothering leaves completely unspecified the lexical identities of the participating elements and their morphosyntactic relationships, as well as the prosodic categories involved. It may be that this characterization of the phenomenon is too broad: we currently lack a full typology of item-specific prosodic effects, especially in the domain of prosodic

smothering. With this caveat in mind, there are several similarities between the Macedonian and Kaqchikel cases that deserve further consideration.

First, in both languages the subcategorization requirements of a functional head X (ASP in Kaqchikel; NEG and *wh*-clitics in Macedonian) in the extended projection of Z (a verb) are satisfied by disrupting the default prosodic behavior of some element Y (ABS in Kaqchikel; object clitics in Macedonian) that is both structurally and linearly closer to Z. Second, in both languages, the relevant heads and extended projections are verbal. Finally, in both languages, the prosodic constituent at issue is the minimal prosodic word.

One might reasonably wonder if these similarities are accidental. We suspect that two shared features—smothering in verbal constituents, and at the ω-MIN level—are simply coincidental. That is, we do not expect prosodic smothering to be restricted solely to verbal projections or to prosodic words. On the one hand, prosodic phenomena are not usually sensitive to syntactic category distinctions (Nespor and Vogel 1986). And on the other hand, prosodically conditioned processes (e.g., domain-final devoicing; Wetzels and Mascaró 2001) are not typically restricted to a single level of the prosodic hierarchy (see Inkelas 1990, Inkelas and Zec 1990, Poser 1990, Chung 2003, Kisseberth and Abasheikh 2011:sec. 7.1, Henderson 2012 for possible examples of prosodic subcategorization at the ϕP- and ιP-levels). And of course, nothing about our analysis of prosodic smothering predicts that the phenomenon should be limited to particular syntactic or prosodic categories.

What may not be accidental is the observation that prosodic smothering takes place within a single extended projection in both Macedonian and Kaqchikel. More formally, it may be that the vertical subcategorization frames that trigger prosodic smothering crosslinguistically all conform to the following schema:

(84)   Element α in the extended projection of head H is required to occur in the same prosodic
        constituent $\pi \in \{\omega, \phi P, \iota P\}$ as H.

This is of course speculative, but we offer the prospective generalization in (84) to set the stage for future research. If it turns out that all cases of prosodic smothering involve co-members of the same extended projection, the subcategorization template in (84) will need to be formally incorporated into the theory in some way (see Clemens 2014, Merchant 2015, Richards 2016 for similar ideas in a very different context).

4.1 Further Comments on Vertical Subcategorization

In this article, we have couched vertical subcategorization in terms of violable constraints (e.g., SUBCAT(ne); section 2.4). However, in the cases under consideration these constraints are never actually violated: they are surface-true statements about prosodic parsing. We are thus agnostic about whether prosodic subcategorization requirements should be formalized as violable constraints or as inviolable dictums, obeyed absolutely in output forms. In either case, we are committed to the view that prosodic subcategorization requirements can trigger phonological repairs: they must do more than simply mark certain combinations of morphemes as ill-formed. For related

discussion, see Inkelas 1990, Kiparsky 1994, Chung 2003, Raffelsiefen 2004, Zec 2005, Paster 2006, Bye 2007, Yu 2007, Kim 2010.

Supposing that prosodic subcategorization requirements are indeed best understood as violable constraints, we are still left with a question of formalization. Item-specific prosodic requirements, of the sort we have modeled with vertical subcategorization, can also be stated in terms of morpheme-specific alignment constraints (e.g., McCarthy and Prince 1993, Kim 2010; see section 2.5 on other approaches to item-specific prosody). For example, the basic pattern of prosodic smothering triggered by *ne* and *wh*-clitics in Macedonian can be captured with constraints requiring that the left edge of these clitics correspond to the left edge of a minimal prosodic word (85b–c). As with vertical subcategorization, basic syntax-prosody alignment constraints will eliminate candidates in which the clitic string constitutes a prosodic word to the exclusion of the verb (85d).

(85)

ne mu gi [$_V$ dava] [$_{DP}$ jabolkata]	AL–L(ne, ω-MIN)	AL–R(ω, LEX)	AL–L(LEX, ω)
a. ☞ [$_{\omega\text{-MIN}}$ ne mu GI dava] [$_{\omega\text{-MIN}}$ jaBOLkata]			*
b. {$_\phi$ ne mu gi [$_{\omega\text{-MIN}}$ DAva]} [$_{\omega\text{-MIN}}$ jaBOLkata]	*! W		L
c. [$_{\omega\text{-NONMIN}}$ ne mu gi [$_{\omega\text{-MIN}}$ DAva]] [$_{\omega\text{-MIN}}$ jaBOLkata]	*! W		L
d. [$_{\omega\text{-MIN}}$ NE mu gi] [$_{\omega\text{-MIN}}$ DAva] [$_{\omega\text{-MIN}}$ jaBOLkata]		*! W	L

Morpheme-specific alignment differs from vertical subcategorization in its predictions about constructions that contain multiple triggers for prosodic smothering. Consider for instance the following example, repeated from (36a), which contains a *wh*-clitic and *ne*:

(86) [$_{\omega\text{-MIN}}$ ŠTO ne   zel]
        what NEG take.3SG.PST
    'What didn't he take?'

Example (86) demonstrates that in the configuration [WH ne VERB], the *wh*-clitic is parsed into the same prosodic constituent as *ne* and the verb. As discussed in section 2.5, this structure falls out immediately from vertical subcategorization: it is the only configuration that satisfies the selectional requirements of both triggering morphemes while also satisfying mapping constraints like ALIGN-R(ω, LEX).

Given the prosodic structure (86), analyses that rely on morpheme-specific alignment must assume that ALIGN-L(WH, ω-MIN) outranks ALIGN-L(ne, ω-MIN) (87): this is the only ranking that will produce a single, flat stress domain in constructions with both *ne* and an outer *wh*-clitic.

(87)

što ne [$_V$ zel]	AL-L(WH, ω-MIN)	AL-L(ne, ω-MIN)	AL-R(ω, LEX)	AL-L(LEX, ω)
a. ☞ [$_{\omega\text{-MIN}}$ ŠTO ne zel]		*		*
b. što [$_{\omega\text{-MIN}}$ NE zel]	*! W	L		*

But under this ranking, alignment constraints predict there should be no smothering if the linear order of clitics were inverted, as in the hypothetical example (88), which features an order that is not actually attested in Macedonian. In that case, only the innermost clitic, the *wh*-clitic, should be aligned with a ω-MIN boundary.

(88)

ne što [$_V$ zel]	AL-L(WH, ω-MIN)	AL-L(ne, ω-MIN)	AL-R(ω, LEX)	AL-L(LEX, ω)
a. [$_{\omega\text{-MIN}}$ ne ŠTO zel]	*! W	L		*
b. ☞ ne [$_{\omega\text{-MIN}}$ ŠTO zel]		*		*

In contrast, vertical subcategorization predicts that the prosody of two-trigger constructions should remain the same even when the order of the triggers is permuted; see (89), (90). This is no surprise: by design, vertical subcategorization is largely insensitive to linear order.

(89)

što ne [$_V$ zel]	SUBCAT(WH)	SUBCAT(ne)	AL-R(ω, LEX)	AL-L(LEX, ω)
a. ☞ [$_{\omega\text{-MIN}}$ ŠTO ne zel]				*
b. što [$_{\omega\text{-MIN}}$ NE zel]	*! W			*

(90)

ne što [$_V$ zel]	AL-L(WH, ω-MIN)	AL-L(ne, ω-MIN)	AL-R(ω, LEX)	AL-L(LEX, ω)
a. ☞ [$_{ω\text{-MIN}}$ NE što zel]				*
b. ne [$_{ω\text{-MIN}}$ ŠTO zel]	*! W			*

In sum, vertical subcategorization and morpheme-specific alignment make different predictions about the prosody of constructions in which the negative clitic *ne* precedes a *wh*-clitic in Western Macedonian: [ne WH VERB]. Unfortunately, this order of clitics is not attested in Macedonian and we are not aware of any other evidence that would allow us to tease apart the predictions of vertical subcategorization and morpheme-specific alignment in the cases under consideration. We must therefore leave a proper comparison of vertical subcategorization and morpheme-specific alignment to another day. The crucial point is that vertical subcategorization is not a recasting of alignment, but in fact makes different empirical predictions.

4.2 Practical Implications

Along with the theoretical conclusions of this article, we draw several practical lessons from our investigation of prosodic smothering. Most saliently, we have demonstrated two important facts about the mapping between syntactic and prosodic structure. First, there is a double dissociation between syntactic and phonological bracketing: not all syntactic constituents map to shared prosodic constituents, and not all prosodic constituents correspond to syntactic constituents. This is particularly true at the level of the word: while there is a clear tendency for complex syntactic heads to correspond to prosodic words (and vice versa), this isomorphism is at best partial.

Second, we have shown that item-specific prosodic requirements are an important conditioning factor for such nonisomorphisms. Surface prosodic structure is determined not only by general syntax-prosody mapping constraints, but also by idiosyncratic prosodic properties of individual morphemes. The upshot is that we need to be very cautious about using prosodic differences as a diagnostic for underlying morphosyntactic structure, especially at the level of the word and below. This lesson is not completely new (see, e.g., Harley 2013, Green and Morrison 2015, Barrie and Mathieu 2016), but it is sharply underscored by the observation that individual morphemes can exert their own peculiar influence on the prosodic structure of output forms.

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